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PRATT, DAVID HALL JR.

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In the case presented, a cost control mechanism is developed for a major Army medical center. Utilization Review (UR), the predominant cost control mechanism used in the civilian health care industry is discussed, along with its implications for the military health care delivery system. Following an analysis of the situation at Madigan Army Medical Center, a UR program is processed. Components of existing civilian UR programs are extracted and used for aspects of UR that are common to both civilian hospitals and the Army medical center. New approaches, such as statistically computed Upper Expenditure Control Limits and Lower Expenditure Control Limits, and a modified form of focused retrospective UR are developed to meet the unique demands of the Army health care delivery system.

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UTILIZATION REVIEW IN THE MILITARY HEALTH CARE DELIVERY SYSTEM: A CASE STUDY

A Graduate Management Project
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In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration
by
Captain David H. Pratt, Jr.
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Abstract

In the case presented, a cost control mechanism is developed for a major Army medical center. Utilization Review (UR), the predominant cost control mechanism used in the civilian health care industry, is discussed, along with its implications for military health care delivery systems operating under the Continuous Quality Improvement concept. Following an analysis of the situation at Madigan Army Medical Center, a UR program is proposed. Components of existing civilian UR programs are extracted and used for aspects of UR that are common to both civilian hospitals and the Army medical center. New approaches, such as statistically computed Upper Expenditure Control Limits and Lower Expenditure Control Limits, and a modified form of focused retrospective UR are developed to meet the unique demands of the Army health care delivery system.

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Introduction

The case study process has been described as an "empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and which multiple sources of evidence are used" (Yin, 1984). Case studies come in many varieties and configurations, depending upon the intent of the investigation. In general, there is no single best format for a case study, with the actual structure of the problem statement, investigation and analysis, and recommended solution routinely custom designed to meet the needs of the investigator and the anticipated audience (Sypher, 1990; Yin, 1984).

Common formats used in case analysis include the linear-analytic, theory-building, and the unsequenced structure. The linear-analytic structure is best equated with traditional experimental method. The sequence of subtopics appearing in the case usually includes a statement of the problem under investigation, methods used, the findings from the data analyzed, and the conclusions and implications of the investigation. The theory-building approach to case analysis will generally reflect some theory-building logic. While the structure of the case may be unique to the situation being investigated, it will generally attempt to carry the reader step-wise through a sequence of

theoretical arguments, leading to a compelling statement or conclusion. Cases with unsequenced structures are those where the sequence of sections or chapters are of no importance. This is perhaps the most common structure seen in cases studies of business situations, since the flexibility of the format is best suited for descriptive case studies of organizational situations where considerable dynamics are at work. (Yin, 1984)

The case presented in this paper is constructed in the unsequenced structure, as discussed by Yin (1984). This approach allows the writer to tailor the case to best suit the situation under study, and analyze it in the manner best meeting the goal(s) of the study. In this instance, the author approached two such goals: The final product of the study should have a realistic application to the situation under investigation, and secondly, the case study developed should be in a format which facilitates use in an academic environment.

Both of the goals stated above are facilitated by the case study design employed in this Graduate Management Project (GMP). First, the case has been organized in a manner that suggests easy application at the organizational level. A background of Utilization Review is presented, including a comprehensive review of current literature addressing the topic and implications for the military health care setting. The Madigan Army Medical Center

case is presented, with pertinent statistical information included in the text, tables and figures, again to provide the reader with a practical background of the setting in which the study was conducted. The implications of the case are addressed in the case analysis. Finally, a practical Utilization Review Program Plan follows the case analysis, as the primary end product of the study, one which can be practically applied both to Madigan Army Medical Center's specific situation, and as a template for Utilization Review programs at other military health care facilities.

From an instructional standpoint, the case was developed in a manner that can easily be applied to the academic environment. Each of the portions of the case can be separately utilized to meet the goals of educating the student concerning the basics of Utilization Review and its implications to military health care, challenging the student with a real life situation requiring analysis and resolution, and providing a baseline solution against which the student's answer to the problems facing Madigan Army Medical Center can be compared.

Utilization Review in the Military Health Care Delivery System: A Case Study

The cost of health care has been the dominant theme in the civilian health care industry for the last two decades. A review of the statistics gathered on the subject reveals why the concerns have been granted so much attention: In 1988, total health care expenditures in the United States amounted to $539.9 billion, an increase of 10.4% over the previous year. This equated to a rate of spending of $2,124 per capita, of which $1,882 went directly for personal health care. Hospital expenditures, in particular, accounted for 39% of all health spending in the nation in 1988, increasing 9.3% over the previous year (Office of National Cost Estimates, 1990). The rate of growth in health care spending has been conservatively projected at an average annual rate of growth of 9% through the year 2000, when it may reach a high of $1.5 trillion, or 15% of the GNP (Longest, 1990). As a point of reference, this estimate would equate to more than six times the amount spent on health care in 1984 (Weinberger & Oddone, 1989). Compared to the Consumer Price Index (CPI), a major indicator of economic trends in the United States, hospital prices rose at a rate of 8.3% in 1988. The CPI rate of increase for the same period was only 4.4% (Stephan, 1990). From the perspective of inflation, the health care costs in the United States have

traditionally risen much faster than the national inflation rate (Fetter & Freeman, 1986).

The state of Washington, alone, spends more than $2.5 billion on health care each year. Over the last four years, this amount has increased by an average of 14%. From 1989 to 1990, the increase was 16.4%. Of the state's total expenditures, more than $759 million were budgeted for acute (inpatient) care for FY 1991. This represents a growth of 15.4% over the last four years. During FY 90, 5-6% of the state's private and public hospitals' inpatient care charges were disallowed by state and federal programs, or were otherwise uncollectable. This resulted in a substantial amount of cost shifting from non-pay or partial-pay patients to those who paid for care on a charge-basis. Prices for these patients increased from 20% above provider-incurred expenses in 1988, to 23.4% in 1989. (Washington State Health Care Authority, 1990)

The idea that the cost of health care in the United States is rising out of control is a common topic of discussion at all levels of government. Federal, state, and local sectors of government have placed considerable pressure on physicians and health care organizations to contain and control the rise of health care costs. This, in turn, has led health care providers to examine the efficiency of the health care delivery systems at

their institutions. These concerns, at both the state and private levels, have been the driving force behind such programs as the Medicare Prospective Pricing System (PPS) and Utilization Review (UR).

The Medicare PPS program is remarkable in that it established a system for reimbursing hospitals on a fixed-rate basis for specific inpatient diagnoses. Under PPS, 467 different diagnoses were identified and categorized according to Diagnostic Related Groupings (DRG). The concept of fixed rate reimbursement provided the first externally generated incentive for hospitals to ensure the efficiency of their operations. If a facility could deliver a service at a cost that was less than the amount reimbursed by the government, a margin of profit would be realized. If, on the other hand, the hospital's costs exceeded the authorized DRG reimbursement for the primary diagnosis, a loss would be incurred.

UR was originally conceived of by hospital administration as a mechanism for curbing unnecessary hospital utilization and related costs (Chassin, 1978). Efficiency became the operative word for civilian health care organizations. One author concluded, "As pressures (placed) on hospitals to improve efficiency... increased, patient care issues discussed (by management were) augmented by concerns about the utilization of resources...." (Ward, 1987). The extent to which a hospital could

conserve resources and inexpensively deliver quality health care largely determined the profit realized by the organization against the fixed-rate reimbursements provided under the Medicare program. As a result, resource consumption and utilization of hospital services by health care providers (the primary users of hospital assets) came under increasing scrutiny. This emphasis on physician practice patterns is the essence of UR. UR programs attempt to reduce health care costs through the identification of unnecessary or inappropriate care, and by encouraging physicians and their patients to utilize lower cost, alternative forms of treatment to achieve the same, desirable medical outcomes (Milstein, Oehm, & Alpert, 1987).

While PPS, DRGs, and UR were the dominant issues in the civilian health care industry in the mid-1970s, they did not come to the attention of the military until relatively recently. And while interest was not overtly expressed at the Department of Defense (DoD) level until the last few years, the application of cost controls to the military health care system has been an issue of interest to the nation's legislature for some time. Increasing budget deficits and a perceived need to trim defense spending have lead Congress to focus increasing attention on military health care spending and lead Congress to pass Public Law 99-661 (PL99-661). PL99-661 mandated that DoD adopt the PPS-DRG system

as the primary mechanism for allocating resources to military health care facilities.

Health Services Command (HSC), which oversees the Army health care delivery system in the continental United States, responded to the directive by ordering that a DRG program be put into effect for HSC medical activities not later than October 1, 1989. Initially, plans for the HSC DRG program provided that a portion of the supply budget for Army hospitals would be allocated based upon DRGs. This directive put military hospitals on notice to closely monitor the cost of health care delivered at their facilities and raised interest in cost reduction programs like UR. The current mood of government suggests that the DoD DRG program will be expanded and will ultimately parallel the DRG based reimbursement methodology used in the civilian sector of the industry. Should this transpire, it will be the Army medical treatment facilities (MTFs) with active, functional UR programs in place that will be able to ensure the most efficient and effective use of the limited resources made available to them.

Further enhancing the military's interest in programs such as UR has been the recent emphasis placed on Continuous Quality Improvement (CQI) programs in the health care industry and the military. In 1987, a report was published by the U.S. Army Management Engineering College, outlining a concept for quality

improvement within DoD. The report proposed the application of a concept known as Total Quality Management (TQM) to the Defense Department. TQM, as addressed in the report, emphasized the need for continuous, statistically based evaluation of performance and the creation of an operational climate that encourages open identification of, and action on, opportunities for enhanced efficiencies and effectiveness. This report, and others that followed, were brought to the attention of then Secretary of Defense, Frank Carlucci. In 1988, Secretary Carlucci announced to the senior staff of the DoD that TQM would be a driving force for the military of the future (Carlucci, 1988).

Secretary Carlucci's presentation to his senior staff on the issue of TQM was a harbinger of things to come for the military health care delivery system. The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO), the only agency used by the DoD health care system to accredit its hospitals, recently published its Agenda for Change. In that document, a considerable amount of emphasis was placed upon CQI as an essential ingredient of management for accredited health care organizations (JCAHO, 1989). The president of the JCAHO suggests that there are, in fact, only two considerations that matter when evaluating the quality of care delivered by a hospital: the care that is delivered to the patient, and "how well the place is

run...." He suggests that the presence of an effective CQI program in a health care organization is a key indicator of a hospital's ability to perform adequately, and that future accreditation of hospitals will inspect for the presence of such programs (O'Leary, 1991).

UR is one aspect of a functional CQI program that may satisfy accreditation requirements for ongoing, statistically based performance measurement criteria aimed at improving hospital operations, and for practically realizing Congressionally mandated cost control objectives. It is the intention of this project to provide a review of UR programs from a historical perspective and as they relate to DRGs, CQI, and how they might affect the military health care delivery system. This discussion is followed by a case description of the current state of health care costs at Madigan Army Medical Center (MAMC). Following the presentation of the case is the author's analysis of the situation and a recommended UR program plan for the hospital. The final UR plan is based on an analysis of the unique needs of the medical center and military health care facilities in general.

Utilization Review

UR programs first appeared in hospitals as a mechanism for controlling health care costs (Richards, 1984). These programs were implemented under the assumption that major savings could be

achieved through the identification and elimination of inappropriate diagnostic and treatment practices which resulted in the unnecessary consumption of resources. Studies analyzing the aspects of patient care that most often led to high costs revealed that an emphasis on the appropriateness, duration, and intensity were the most effective objectives foci of UR efforts (Becker, 1986; Ermann, 1988; Kenkel, 1989).

Research has shown physicians to be primary drivers of health care costs (Broderson, 1986). Regional variations in physician patterns of practice have been positively correlated with variations in the cost of delivering care in those regions. Examples of hospital services tied directly to excessive physician patterns of practice include the overuse of laboratory and radiological testing, expensive operations and medical procedures, and over treatment of the terminally ill (Broderson).

In response to this situation, UR has evolved over the years from an initial form of voluntary self-monitoring by physicians and hospitals, to internal peer review, to regulatory mandated, formalized external reviews by organizations chartered by the government (Becker, 1990). One author went so far as to say that UR came into existence because Americans have traditionally been "over-hospitalized, over-treated, over-medicated, and over-tested..." (Becker, 1986). UR addresses this possibility and

suggests that by identifying unnecessary care and encouraging physicians to use lower cost alternative forms of treatment, a better quality of care can be achieved and the rising cost of health care can be contained (Milstein et al., 1987).

The concept of UR so appealed to those responsible for ensuring the fiscal viability of the American health care deliver system that in 1963, the Joint Commission for the Accreditation of Hospitals (later retitled the Joint Commission for the Accreditation of Healthcare Organizations [JCAHO]) recommended the use of UR in its standards for the accreditation of hospitals. In 1964, the American Medical Association endorsed the concept, and by 1966, UR had been included as a prerequisite for participation in the Medicare program (Chassin, 1978; Ermann, 1988; Stephan, 1990). In 1984, the federal government spent $300 million to study, design, test and encourage implementation of UR programs in the United States. The investment seems to have paid off. In the state of New York, alone, UR has been linked to savings of more than $80 million (Garrigan, 1986). By 1987, UR was established as the primary cost control vehicle used by preferred provider organizations (Chassin, 1978; Ermann, 1988), and has been described as the fastest growing cost containment mechanism used in the industry (Becker, 1986). Most recently, UR was included as a key element in a list of twelve indicators of organizational and

management effectiveness for health care organizations, published as part of the JCAHO's Agenda for Change (JCAHO, 1989).

UR has met with a variety of responses since it arrived on the scene in the mid-1960s. To many physicians, UR is seen as a disease (Becker, 1989), or, at the least, as an oppressive device for curtailing necessary services for patients (Sederer, 1987). One common analogy equates UR with drastic reductions in amount of capital invested in patient care, and goes on to suggest that less investment will reduce physician initiative and satisfaction, reduce the quality of care received by the patient, and result in increased litigation based on insufficient care. In fact, studies have concluded that UR programs have not decreased staff satisfaction, have not resulted in detectably worse patient outcomes, or increased the incidence of litigation based upon alleged insufficient levels of care (Milstein et al., 1987). On the other hand, UR is viewed by a great number of those involved in health care policy planning as a way to enable patients to get what they need (Weisman, 1990), and as a vehicle for improving physician and health care organization performance (Greaney, 1986; JCAHO, 1989; Re & Krousel-Wood, 1990).

Those who pay the bill for health care view UR as an answer to unnecessary, high cost treatments delivered at inappropriate health care sites (Becker, 1989). In one case, UR was reported as

reducing overall hospital utilization and related costs by 15% to 40% (Milstein et al, 1987). In a separate study, implementation of a UR program reduced admissions by 12-13%, inpatient days by 8%, hospital expenditures by 11.9%, and overall medical expenditures by 8.3% (Varney & Schroeder, 1990). When the state of Illinois implemented a state wide UR program, non-acute days in the state's hospitals were reduced from 25% to 15% during the first year. At the end of the second year, that figure dropped to 9% (Fielding, 1985). This finding is based on the assumption that inpatient admissions should be limited primarily to acute illnesses.

In another instance, a large hospital was able to reduce non-acute patient days when management discovered that patients were being admitted for surgery on the evening prior to the scheduled operation. Through an analysis of the situation, it was determined to be just as appropriate to admit those patients on the morning of the operation. Following an intense review of their procedures, fully 80% of the non-emergency surgeries were shifted to morning-before admissions, saving the hospital substantial inpatient costs (Richards, 1984).

Typically, UR programs review the appropriateness, necessity, and intensity of inpatient care through prospective, concurrent, and retrospective case review (Fielding, 1985). Prospectively,

through a case by case analysis, UR professionals attempt to identify the best site for care and validate the rationale for the patient care plan established by the health care professional (Becker, 1990). The goal of the UR case worker is to work with the health care professional to identify potential patient admissions that might be better handled in other than an inpatient setting. An example might be a patient scheduled for surgery on an inpatient basis, who might be better served by a less costly, yet equally efficacious outpatient procedure. This approach would eliminate the high cost of a hospital stay, while obstensibly maintaining high quality care. The goal would be to work with surgeons and physicians to eliminate inefficient practice patterns in favor of those deemed more resource efficient, yet equally appropriate therapeutically (Broderson, 1986).

As suggested earlier in the discussion, a major benefit often realized by hospital UR programs is the elimination of unnecessary surgery and the long, costly hospital stays associated with those procedures. From that perspective, an examination of the appropriateness of care might include: 1) ensuring that elective surgery is medically necessary through the use of second medical opinions, 2) eliminating unnecessary hospital stays before surgery, 3) preventing unnecessary weekend admissions before elective surgery, 4) eliminating inpatient care when outpatient

care would be more appropriate, and 5) preventing inpatient stays for diagnostic services prior to surgery when those services would be more appropriately performed on an outpatient basis. (Garrigan, 1986)

One author has reduced the cost of health care to the equation: "Cost = Use X Price" (Greaney, 1986). In this instance, "Use" is synonymous with length of stay (LOS), or how long an inpatient is kept in an acute care bed, receiving treatment. The price variable would be equal to the average cost per bed day at a particular facility. In this equation, UR would focus on the "use" portion of the equation. Prospectively, this involves determining the anticipated LOS for a patient prior to admission, for later use in assuring that the patient stay does not exceed the targeted LOS without good reason.

Concurrently, LOS review involves a review of patient charts on the ward by UR personnel to identify patients who are approaching or have exceeded the maximum allowable LOS, and to identify excessive or inappropriate physician practice patterns in patient treatment. Under concurrent review, an admitting physician may be asked to validate the continuing need for a hospital stay for a patient approaching the maximum allowable LOS, and to certify the need for continued stay. In some cases, the admitting and subsequent diagnoses may be found to be in error and

can be changed by the physician, resolving the situation. In other instances, a continued stay may be determined as medically necessary in spite of existing LOS guidance.

Retrospectively, cases are often reviewed after the patient has been discharged from the hospital. The goal is to determine if patient care professionals have adhered to standards of practice regarding the extent of care provided. Again, the focus is on cases which have exceeded allowable LOSs for a particular diagnosis. This overall focus on LOS has evolved from considerable research that has positively correlated the length of an inpatient's stay with the cost of care provided for the patient. These same studies have concluded that reductions in the average LOS reduces the overall cost of health care at the institutions under study (Becker, 1989; Rosko & Broyles, 1987).

Perhaps the most significant criticism of UR voiced in current literature is the complaint that UR focuses too much attention on efficient health care, at the expense of quality. While indeed a common protest by those confronted by the specter of a UR staff policing their operations, to date, the case has not been found to be true (Varney & Schroeder, 1990). In fact, studies have concluded that monitoring patient care standards and appropriately modifying treatment programs to reflect the best possible level of fiscal and medical efficacy has not sacrificed

quality of care (Fielding, 1985). It has been further suggested that by limiting care to only that which is of appropriate duration, intensity and location, the risks of nosicomial infection and iatrogenic illness associated with unneeded surgery and hospitalization can be eliminated (Milstein et al., 1987; Strumwasser, Paranjpe, Ronis, Nastas, Livingston, & Share, 1989).

The negative perceptions attached to UR are generally unwarranted. These perceptions are seen by many UR professionals as being derived from situations where inappropriate information has been disseminated to hospital staff and practitioners. In those instances, concerned individuals were not informed of the proper application of UR data or of the assistance that UR programs can provide in helping to resolve potentially dangerous, inappropriate physician practice patterns (Trauner, 1987). When the proper information is available, studies have shown that physicians, in particular, do want to know the cost of the care that they are delivering. In fact, physicians will often work actively with hospitals to offer the most cost effective level of care possible, consistent with quality considerations (Brennan, 1985).

In cases where the proper amount and content of information is presented to health care professionals, UR programs are viewed as having the added advantages of reducing the risk of malpractice

litigation (Ermann, 1988) and strengthening standards of practice (Greaney, 1986). As one author states, "Physicians and hospitals should view UR as a demonstration that they provide an adequate level of care-not too much, or too little, but enough." (Richards, 1984).

The efficient use of resources is the major thrust of UR. However, money is not the main issue; ensuring that a high quality of care is maintained in conjunction with a high level efficiency is the ultimate goal of UR. As in the practice of medicine, the first rule of UR should be "ne primum nocere": above all else, do no harm. If adopted, that philosophy should effectively eliminate any desire to reduce health care costs at the expense of the patient's well-being, as well as alleviate physician concerns over the potential decline in the quality of care associated with an aggressive UR program. Consistent with this concept is Greany's suggestion that the goal of any UR program should be to provide the highest level of care possible, in the most cost-effective manner (Greaney, 1986).

Many health care professionals have postulated that a primary measure of quality care is not having unnecessary things happen to the patient during the course of treatment (Becker, 1989). From an industry perspective, ensuring that unnecessary treatment and use of resources is minimized is an essential component of a

facility's ongoing quality management program (American Hospital Association [AHA], 1990; O'Leary, 1991; Andrews, 1991). On this basis, efforts to ensure optimal resource utilization and good patient care are necessarily intertwined (Chassin, 1978; Ward, 1987; AHA, 1990). Unnecessary surgery consumes resources that might be better utilized for another patient.

From a fiscal sense, unnecessary diagnostic and therapeutic procedures will not be funded by third party payors such as insurance companies, Medicare, or Medicaid. In those instances, the health care organization and provider would incur a financial loss from the procedures. Those losses would subsequently be passed on to patients who could afford to pay higher costs--a procedure known as cost shifting. The consequences would be higher costs to the facility and the patient, reduced access to health care for all, and potential fiscal insolvency for the organization. In short, the entire health care system would suffer, and the quality of care delivered to the supported population would decline.

In spite of the foregoing logic, many health care providers continue to express a fear that a heavy emphasis on fiscal efficiency would have a negative impact on the quality of care. This perception, however subjective, is pervasive throughout the industry and must be addressed if UR is to be effectively

implemented in a facility (Wyszewianski, 1988). In response to these concerns, several studies have focused attention on the significant positive effect that UR has had on the quality of care delivered in hospitals (Greaney, 1986). From these studies, it might be theorized that efficient procedures lead to a more timely diagnosis, expediting the determination of the appropriate therapeutic approach to the patient's condition. Studies have held this conclusion to be generally true, with little or no negative impact upon the quality of health care delivery (Varney & Schroeder, 1990).

The fiscal impact of UR on the health care has been undeniably strong and positive. Some institutions have reported savings of as much as 13% in operational costs following implementation of a hospital wide UR program (Adams, 1987). In these instances, avoidance of unnecessary diagnostic and therapeutic procedures can be credited with the savings. Case review appears to be the primary agent driving these substantial savings, serving as the vehicle for identifying and eliminating inappropriate care.

Physician cooperation has been identified as a key to successful implementation of the UR process, if savings are to be realized. Physician cooperation with UR program goals and objectives appears to be on the rise. In one study, UR efforts

resulted in physicians altering 30% of their health care arrangements for patients in favor of more appropriate, cost effective mechanisms. No negative impact on the quality of health care was noted in the study or for those institutions reporting the cost savings. (Fielding, 1985)

The well documented cost savings associated with UR have drawn the non-medical business sector into the continuing discussion over UR and its impact on health care costs. The possibility that businesses may be expending corporate budgets on inappropriate, nonessential health care has driven many firms to develop or contract for UR programs of their own. In these instances, UR is used as a form of retrospective review of medical claims submitted through the company's employee medical benefit package.

Some firms have gone so far as to adopt their own standards for admission and LOS for analyzing insurance claims. Approximately 30% of U.S. businesses providing medical benefit packages to their employees use a commercial UR firm as a vehicle to control costs (Becker, 1986). Of those businesses surveyed, 59% indicated that preadmission screening for the appropriateness of inpatient admission caused physicians to reconsider patient treatment programs and recommend a more cost-effective, alternative form of care (Fielding, 1985). A single east coast

food manufacturer reported a 20% decrease in health care expenditures as a result of UR--approximately $4 million. When compared with the amount of money the firm was required to invest in its UR program, this equated to a return on investment of nearly 30:1 (Becker, 1986).

In another study, a major east coast manufacturer reported a savings of 400 hospital days per year per 1000 employees following initiation of a UR program aimed at medical benefits. Caterpiller Tractors reported a 17% savings in hospital days. Blue Cross/Blue Shield, longtime users of UR programs, have reported savings of more than $302.5 million over a five year period (Ermann, 1988).

Large hospitals, particularly those with sizable training programs, may find the prospect of reviewing each case admitted to the hospital daunting and conceptually cost prohibitive. Other facilities confronted with similar prospects have adopted a focused UR approach. This concept limits concurrent and retrospective UR to those cases which cost the hospital the most money, have the highest incidence of negative risk management indicators, or are of specific concern to management. The approach has proven highly successful in many instances. At least one analysis of current UR data has shown that 10% of medical cases seen by physicians account for nearly 70% of health care expenditures. In this instance, the authors reported that intense

management of that 10% resulted in a long term savings of 60% (Henderson, Souder, Bergman, & Collard, 1988).

Inpatient care accounts for 39 cents of every dollar spent on health care in the United States (Strumwasser et al., 1989). 15% of all admissions have been found to be for nonacute conditions that many consider inappropriate for admission. These inappropriate admissions have been found to account for 11% of all monies spent on inpatient care. Of cases studied, 18% of medical, 5% of surgical, and 53% of substance abuse admissions have been found to be nonacute (Strumwasser et al.). Close examination of these cases may yield significant savings should the cases be selected for outpatient treatment instead of admission. One author reported that a facility focusing on this aspect of UR trimmed 13-30% from medical bills sent to patients. This result was equated with a reduction in unnecessary admissions of 30% (Becker, 1986). Another investigator was able to link this approach with a per capita reduction in admissions of 30% per 1000 individuals served, and a 25% reduction in the number of days of care delivered per 1000 lives in the available patient population (Greaney, 1986).

The obvious success of UR in the health care setting has led to major changes in the way business is conducted in medical treatment facilities. The two most prominent examples of this are

the current emphasis on outpatient treatment and establishment of national standards for UR (National Utilization Review Committee, 1990). The shortened lengths of stay resulting from the Medicare PPS program has stimulated a demand for more extensive outpatient care capabilities within the health care industry (Weinberger & Oddone, 1989). The allowable lengths of stay upon which the Medicare reimbursement is based have motivated physicians to discharge patients earlier and use outpatient services as the mechanism for patient follow-up.

Excessive Medicare UR requirements and the apparent distaste of the program held by many physicians has, in a few cases, led to UR programs with little substance, set up strictly to meet federal guidelines. This situation has generated the need for UR oversight. A national commission of UR professionals has recently completed development of a set of UR standards to be used to evaluate UR programs nation wide. Publication of the final standards, to be used in the accreditation of UR programs throughout the United States, was completed in early 1990 (Weisman, 1990). These standards are available to the general public and should help resolve concerns over programs that are less than substantive.

The concept of UR has had a significant impact on the formal and informal structures of hospitals. Because of its oversight

authority, access to management, and potential impact on the facility's resources, the hospital UR department is often seen as one of the most powerful departments in the organization (Adams, 1987). Given the current emphasis on CQI, and the inherent role of UR in an organization-wide quality management program, this trend is likely to continue. Further, the publicity that the rising cost of health care has received, combined with decreased subsidization of health care by all levels of government suggest that UR will remain as a key element of the successful hospital's organizational structure.

The future is likely to see the expansion of UR, perhaps to a national level. One source suggests that UR data be combined at a national level to provide a global database of UR information. This is seen as the first step toward departing from regionalization of standards of care and their associated costs, toward a nation-wide set of comparative standards against which UR data throughout the U.S. can be compared. (Ward, 1987)

Given the necessity of cost containment mechanisms in the current health care environment, physicians can be expected to gradually accept UR as modus operandi. This will undoubtedly redirect some portion of the physician's attention away from pure diagnosis and treatment, toward fiscal considerations. One major future concern may be the impact of therapeutic decisions upon the

patient's ability to survive financially as well as physically. Another may focus on the impact upon the treating hospital's livelihood. This increased awareness of UR concerns will be largely a result of an improved perception of the relevance of UR by the physician, the proven credibility and results of the review process, and enhanced education of physicians as UR becomes more and more a way of life (Stockmyer, 1989). This, in turn, will lead to the goal desired by UR professionals throughout the industry: that physicians and other health care providers focus on the question of what effective care can be provided, at what cost, given limited resources (Sederer, 1987)?

Implications for Military Health Care

Little literature is available addressing the use of UR in the military medical environment. However, much can be gleaned of UR's potential application to the military health care environment from general observation of the system.

First and foremost, UR is a necessary component of an effective, ongoing organizational quality management program (AHA, 1990; O'Leary, 1991). The endeavor to identify opportunities to improve efficiencies within the bounds of acceptable standards of patient care is an essential ingredient of a good hospital management program (JCAHO, 1989). The president of the JCAHO has suggested that good patient management focuses on providing

appropriate, effective care. This is the essence of UR. He goes on to suggest that for quality management to be effective, management must adopt a mind-set that encourages quality enhancement concepts like UR, that are statistically based, as the focus of their CQI programs (O'Leary).

The focus of UR in a military MTF must necessarily be different from that used in a civilian setting. To continue operations, the civilian hospital must generate an excess of revenues. To do this, the civilian MTF must draw patients through its doors, treat them, and collect payment for services which exceeds treatment costs. In this manner, the civilian hospital accumulates a reserve of revenues that can be used to offsett allowances for uncollectables and bad investments, cover the cost of future programs and capital investments, or provide a return to investors. Civilian UR programs attempt to ensure that funds expended for patient care are spent in the most efficient manner possible, consistent with quality of care concerns.

The fiscal orientation of the military MTF is considerably different from that of its civilian counterparts. Military hospitals are funded in total by Congress, through DoD and, in turn, through their major commands. The availability of funding for the MTF is based upon the amount of funds made available to DoD. Fund availability, combined with historical workload levels

for an institution, future mission considerations, and organization strategic plans are considerations taken into account when awarding MTF budgets. It is likely that this pattern of funding will continue under future governmental budget programs, whether based upon DRGs or any other mechanism.

The government seldom has enough money to fully fund all DoD requirements. The commander of the Army MTF has little control over the dealings of Congress, major command strategic plans, or future missions dictated by Congress or the world situation. MTF commanders are forced to direct their attention toward the single aspect of the budgeting process over which they have some control: workload reporting. By maximizing reportable workload, hospital commanders ensure receipt of the maximum funding possible for their institutions.

The harsh operational reality of the military's tight budget situation has led to considerable workload "gaming" at the hospital level. This gaming has resulted in patients being admitted for routine diagnostic services that would otherwise have been accomplished on an outpatient basis. This tactic has allowed the MTF to inflate actual inpatient workload data, positively impacting the facility's fiscal posture. The goal is to overstate

the number of admissions and the resulting number of occupied bed days in the MTF, so that more funds are received during the budget allocation process (McFarling & Callaghan, 1990).

The current trend in Congress toward fiscal restraint has lead to dwindling defense budgets. This has stimulated progressive hospital commanders to look for better and less expensive ways to treat their patient populations. Much attention has been focused on contractual partnership programs with civilian doctors, the Civilian Healthcare and Medical Program for the Uniformed Services (CHAMPUS) reform act, and other programs as ways of reducing costs. The effectiveness of these programs has been questioned at all levels of government, leading to a general consensus that the most cost effective location for patient treatment is "in-house", at the military MTF, rather than at an alternate location (U.S. General Accounting Office, 1990). Given that situation and the reported success of UR in the civil sector, UR emerges as a key, potential mechanism available to hospital commanders for realizing future cost savings.

The traditional emphasis that hospital commanders place on budget maximization is not likely to change as long as military hospitals must compete against one another for limited resources. It is reasonable to assume that a military UR program would be required to focus on that goal as well. Potential sources of

funding for military hospitals are limited, and include the budget allocation process discussed earlier, third party reimbursements for dependents and retirees covered by employer and group health care programs, state and federal agency reimbursement for civilian emergencies and disability programs, Veterans Administration (VA) cost sharing programs, and revenues derived from private-pay civilian emergency patients. Future plans include programs to capture reimbursements from the Medicare and Medicaid programs, as well.

Presenting the best possible picture of workload to major commands is one method of ensuring that annual budgets are maximized. Under the budgeting formulas traditionally used in the military, reportable workload was based upon the number of occupied bed days, admissions and clinic visits reported by individual MTFs. Under DoD's new DRG-based program, the allocation of the supply portion of the MTF's budget is based primarily on the number of admissions reported in the hospital, by type and acuity of diagnosis. The more acute the admitting diagnosis, the heavier the weight of the reportable workload. The hospital with the highest accumulated workload weight will be in the best position to receive the lion's share of available supply budget allocations when it becomes available. (McFarling & Callaghan, 1990)

The basic supply dollar formula used under the DoD DRG-based supply budget allocation program is the product of a military hospital's supply weighted medical work units (MWU)s). Supply weighted MWUs are calculated by multiplying a base rate plus a series of additives related to population demographics, facility type and capacity, hospital mission, geographical location of the facility, and other factors, times the reported patient workload. The total base rate and additives a value that is unique to each facility. These rates are averaged for all Army MTFs to generate a command wide average rate. The individual facility supply cost/MWU is then divided by the command wide average rate to produce a facility unique supply allocation index. Hospitals with higher than average supply costs will generally have an index of less than 1.00. Those with lower costs will show values greater than 1.00. The MWUs earned by each facility are multiplied by the supply allocation index to produce supply weighted MWUs. This approach is fair to the extent that it adjusts for higher than average supply costs which are legitimate. (McFarling & Callaghan, 1990)

This approach to supply budget allocation, and its potential for expansion to other areas of operations (personnel, equipment), should direct progressive MTF commanders away from maximizing the number of occupied bed days. Their focus should be redirected

toward a goal of admitting patients with the highest level of acuity consistent with mission requirements and the unique needs of the supported population. Additionally, the motivation for the commander operating under this scenario would be to ensure that the LOS attributed to these patients was as short as possible, maximizing patient turnover, and in turn, the total MWUs reported to the major command.

Given these circumstances, UR in the military hospital assumes a posture that emulates that of civilian programs. If a patient can be treated at a cost that is less than the amount of resources awarded by the parent, a potential budget surplus is generated that may be used by the military facility for discretionary spending. If the cost per MWU exceeds targets, a deficit is generated which must be covered by reductions in spending in other areas. It is logical to assume, therefore, that the proactive hospital commander will put in place a program such as UR, to ensure that funding targets are maintained.

Like the DRG programs used in the public and private sectors, the DoD DRG-based system prescribes a target length of stay (LOS) for specific diagnoses. As discussed earlier, literature in the health care field has indicated that LOS is a primary correlate with the cost of health care. In other words, reduce LOS and the cost of health care goes down. Allow LOS to extend outward and

costs go up. It would be appropriate, therefore, for hospital commanders focus the major thrust of their UR programs upon a review of LOS.

Existing financial reporting mechanisms in the military do not allow for an accurate estimate of the actual cost of health care (McFarling & Callaghan, 1990). The structure of these systems focuses on very high levels of reporting, are extremely rigid, and do not accurately record detailed costs of such elements of expense as supplies used per patient and special pays for health care professionals. The closest approximation of the cost of health care provided at the organizational level is provided by the Army's Medical Expense Program Reporting System (MEPRS). This system provides a substantial amount of fiscal information that can be used by MTFs to approximate the cost of health care (Department of Defense [DoD], 1986).

The MEPRS program provides resource expenditure data on a department by department basis for all activities in the military hospital. Included are direct and indirect costs such as military and civilian pay, ancillary support costs, facility support, and supply and equipment costs. Indirect costs are stepped down from traditional cost centers such as logistics, laboratory and others,

to workload generating centers like Surgery, Medicine, Pediatrics and their subdisciplines. This data is readily available in routine, quarterly reports. (DoD, 1986)

One approach to cost management under UR might include statistically correlating MEPRS cost data with total DRG weights reported at the hospital and department level. This would facilitate development of average costs per DRG for each area. From that point it would be relatively simple to determine what current budgets allow for treatment costs on a DRG basis, and compare the hospital's or department's "per/DRG" costs against those targets.

It would be unreasonable to expect any facility to adhere strictly to a DRG target cost. Because of variations in disease acuity, patient-specific factors and variability in physician patterns of practice, expenditures per DRG will always fluxuate. It would be reasonable, however, to expect physicians to adhere to treatment standards that fall within specified ranges of cost. A computation of basic descriptional DRG-to-cost statistics, and a correlational analysis can be used to generate these ranges based upon a specified number of standard deviations of costs around a determined mean. This approach is similar to that used by Re and Krousel-Wood in their 1990 study on statistical quality control.

The data necessary to carry out this task is not currently available for individual patient cases, but can be developed on a department basis through the MEPRS and PAD reporting systems. A department-by-department analysis of cost ranges can be conducted using this data, with treatment outliers identified and audited on a case-by-case basis when necessary. Publication of the results of these analyses by the command would encourage increased efficiency in the departments, modification of inappropriate or excessive health care provider practice patterns, or problems with unrealistic DRG target cost ranges. This approach would be consistent with current DoD initiatives to identify opportunities for improving efficiency of health care procedures as a part of ongoing organizational CQI programs.

One UR vehicle not traditionally used in the military health care system, yet prevalent in the civil sector, is commercially generated standards of practice. Literally hundreds of standards of practice exist on a discipline-by-discipline basis in the United States. For the large part, these standards are discipline specific and have been generated by professional organizations. Most often the standards are used as a point of reference for judging malpractice cases, or to enhance the professional standards of practice. Education of physicians along the lines of these standards is one method of encouraging efficiency in

treatment programs that has been found to be effective in civilian hospital (Manheim, Feinglass, Hughes, Martin, Conrad, & Hughes, 1990).

In most cases, third party payors rely on written standards of practice as a basis for reimbursement actions. From this standpoint, both the clinician and the administrator have a stake in ensuring that acceptable standards of practice are used, ensuring that excessive treatment costs are avoided and quality of care is maintained. While this has proven to be a generally effective approach in medicine, it is important to note that the validity of written standards of practice has been questioned (Strumwasser, Paranjpe, Ronis, Share, & Sell, 1990). From that standpoint, it is imperative that whatever standards are used, that the physicians whose performances are being evaluated agree to the use of the standards.

UR in the military, like the civil sector, should have three primary aspects: prospective, concurrent and retrospective review. Prescreening is the form of prospective review most commonly seen in the health care industry and best suits the needs of the military medical system. Pre-screening could be used in the military MTF to meet the two goals of maximizing the amount of resources available and optimizing the use of resources. Pr-screening can be used to verify the eligibility for certain

inpatient procedures that are to be funded by third party payors. This would ensure that the hospital receives maximum payment for inpatient services, and does not authorize an inpatient treatment that the third party payor has determined to be more appropriate on an outpatient basis. Disagreements on the form of treatment that should be used for a patient has been recorded in only 40% of the cases prescreened against written standards of practice (Becker, 1989). This incidence is often enough, however, to necessitate considerable discussion between the insurance company and the prescreenor/physician.

One of the key areas where pre-screening could be accomplished in the military MTF is in the emergency room. This form of screening involves ascertaining the nature of a patient's medical coverage at the door as they arrive, or as soon as is reasonably possible. This allows the administrative staff to begin the effort of contacting the individual's insurance company and opening a dialogue if admission becomes a necessity. In the event of a non-DoD beneficiary's arrival at the hospital, how quickly a patient can be transferred, within the parameters of acceptable medical practice, is directly related to the possibility of the hospital being paid for the treatment.

The same sort of pre-screening should be applied to general admissions to the hospital when those admissions are for elective

surgery or observation not related to an emergent or traumatic event. In the case of general admissions, the admitting physician would request authorization for admission of their patient from a prescreening nurse, a clinical staff specialist working in the admissions office. The prescreening nurse would collect the necessary information concerning the admitting diagnosis, anticipated treatment plan and patient identification. If the patient is covered by an employee health program, that program's screening officer would be contacted for pre-approval of the admission. Applicable standards of practice, including the allowable LOS for the admission, would be issued by the insurance company. This information, along with the admission authorization, would be passed to the patient administration officer and the admitting physician. This procedure would not be used to restrict a physician's latitude in treating the patient, but would serve to provide benchmarks against which the physician, the patient, and the hospital could gauge the cost and effectiveness of the treatment program. Additionally, and perhaps of most significance to the UR process, this form of pre-screening would ensure that maximum payment is received from the insurance carrier for the treatment rendered to the patient.

Concurrent review is applicable to the military MTF as it relates to both the monitoring of LOS during the course of

treatment, and for peer review by physician staff members during the normal course of departmental operations. Peer review, in the absence of UR, is currently a common practice within medical departments at military MTFs. The process routinely involves a round table discussion attended by departmental staff members, focusing on individual cases and the appropriateness of actions taken by the attending physician. This practice is extremely popular with physicians, since it focuses on improving medical skills rather than policing abhorrent behaviors.

LOS reviews in civilian hospitals are usually conducted by clinically trained staff who have been hired specifically to carry out UR functions. They are often clinically-oriented individuals, trained to identify diagnoses listed in patient records and relate them with a target LOS. Most often, the allowable LOS is identified by patient administration staff and placed on a form, with the preadmission DRG clearly indicated and placed in the forward position in the medical record. This format allows UR personnel to quickly review the records on the ward to note any patient who is approaching the maximum allowable LOS. When a patient has reached the allowable LOS and a discharge order has not been completed, the physician is notified and required to validate the admitting DRG and request an extension of the LOS. Validating the DRG allows a timely review of the principle

diagnosis and creates the potential for modification of the DRG and the associated LOS. In those cases where the LOS has been reached and the DRG is unchanged, the insurance company is notified of the extended LOS and the reasons for the extension. The approval or disapproval of the extended LOS by the insurance company is passed on to the physician and patient for their consideration in further treatment decisions.

Retrospective review is seen commonly in the military environment in the form of compliance inspections. Generally speaking, after the treatment has been accomplished and the patient is discharged, a review of data pertaining to that treatment is undertaken to determine if the actions taken by health care providers meet certain pre-established criteria.

Applied to UR in the military setting, retrospective review can logically take on one of five complexions. The first involves physicians reviewing actions taken by peers to ensure that the care provided met standards of practice and that desirable outcomes were achieved. Unfortunately, this sort of review is passed by, or at best glossed over, when workload is heavy and staff is short.

Another form of retrospective review can be conducted from a strictly financial perspective. In this instance, total expenditures for the hospital and specific departments can be

accumulated and correlated against the total DRG weight recorded by an activity. This approach facilitates a determination regarding the appropriateness of resource consumption per DRG experienced by the activity. This data can be compared with target costs, a baseline of acceptable costs, or a range of allowable costs to identify areas of operations which should be rewarded for efficiency or investigated further.

A random review of discharged cases can be another useful method of carrying out a retrospective review in the military hospital. In this instance, a random number generator is used to select medical records for review from a pool of available records. Selected records are examined against commercially available, clinically validated treatment standards and are costed based upon information contained in the record. These costs are then combined with a predetermined overhead cost per occupied bed day, and are totalled and compared against acceptable standards for the principle DRG. While a valuable tool in the civilian sector, this sort of review is nearly impossible to accomplish in the military health care delivery system. Patient records are not configured to capture resource expenditures and health care providers are not routinely trained to document treatment measures in a manner that facilitates costing.

One form of retrospective review that may be of value to the military hospital is a focused review aimed at high risk, high dollar value DRGs. Through a routine review of cases seen at the MTF, the command can select those DRGs that present the most challenging resource management problems. Examples might include open heart surgery, complex orthopedic operations, and pneumothorax procedures, where the costs are high and may have a significant impact on the fiscal status of the facility. For the DRGs selected, discharged cases would be reviewed by UR professionals against accepted standards of practice. Disparities between actions taken during treatment and those presented in the standards would be brought to the attention of the physicians overseeing the review. While not resulting in any direct savings, this form of retrospective review does highlight those instances where treatment may have exceeded that which was necessary, help to educate physicians concerning their excesses, and stimulate efficiencies over the long run. This form of review also reinforces a baseline of treatment procedures for identified DRGs, ensuring that patients receive a basic core of necessary therapies, and enhances the quality of care offered at the institution.

The final form of retrospective review commonly found in the health care industry is external peer review. In this instance, a

third-party payor or governmental agency requires that, as a condition of participation in a particular payment program, an external peer review organization examine discharged cases periodically to verify efficiencies and standards of care. Medicare is perhaps most famous for demanding these sorts of review of civilian hospitals. The military currently undergoes external peer review as an adjunct to quality assurance programs, and to appraise Congress of the military's efforts to deliver an acceptable standard of care to eligible beneficiaries. It is likely that as the military moves more and more into the arena of third party collections, increasing demands will be placed upon the military to submit to external peer review for UR purposes.

Visibility of program results by management is a key to continual quality management, and is a necessity for any military hospital's UR effort to be successful. Management must take an interest in the findings of the UR program and review them on a periodic basis. Recommendations must be made, action taken, and results followed up on for the program to carry any operational weight in the organization. Management must be seen as the leaders of the process to identify situations where efficiency can be enhanced, and as the facilitators of hospital wide efforts to do so.

Financial reports are one set of tools available to management to ensure that they are aware of and can utilize the results of their facility's UR program. Already discussed was the possibility of correlating MEPRS data against the total DRG weight for an institution or department. The results of this analysis can serve as the basis for periodic, retrospective reviews of hospital and department operations. In this manner, management can chart the progress of the MTF and the departments of the hospital against standards, reward exceptional performance, and direct attention toward those areas where additional improvement is needed. The goal would be to provide a baseline against which continual quality improvement efforts could be compared.

It is apparent from a review of the current literature and discussion of the implications of UR to the military health care system that UR is a potentially viable tool for military hospital commander.

The Case: Madigan Army Medical Center

Madigan Army Medical Center (MAMC) is a 400 bed tertiary care facility serving the military health care beneficiary population of Fort Lewis, Washington. The region supported by the medical center encompasses the states of Washington, Oregon, Idaho, Montana, and Alaska. Under base realignment and closure programs being considered by the DoD, MAMC would pick up regional responsibility for additional areas, including northern California and Nevada.

Named after Colonel Patrick Sarsfield Madigan, a noted neurophychiatrist, MAMC treats a combined total of over one million inpatients and outpatients per year. This fact makes MAMC one of the most medically active military medical centers in the country. An average day at MAMC includes over 3000 outpatient visits, 63 inpatient admissions, 1200 meals served in the hospital dining facility, an inpatient census of 279 patients, 7 live births, 31 operating room procedures, 4500 pharmacy procedures, 300 emergency room patients, and more than 33,000 pathology procedures. (MAMC, 1990)

MAMC's missions are typical of any other training facility, and include patient care, training, research, and logistical support for the multi-state region. The hospital prides itself on the high quality patient care provided by its staff of over 2500

military and civilian personnel. The medical center has the capability of providing a wide range of medical care, including general medicine, dermatology, general surgery, gastroenterology, deep x-ray and radium therapy, dental specialities, and many other general and unique medical specialities. The facility's military staff mix includes more than 225 physicians, 152 nurses, and 95 administrators and medical specialist officers serving in a variety of capacities. Civilian staff specialists include 16 General Schedule (GS) physicians and 12 contract physicians. (MAMC, 1990)

MAMC operates an extensive physician training program. Residencies exist for twelve medical specialities, including emergency medicine, general surgery, obstetrics and gynecology, pediatrics, internal medicine, family practice, pathology, public health, orthopedics, urology, and otolaryncology. Medical fellowships conducted at the medical center include such diverse areas as developmental pediatrics, neonatology, endocrinology, faculty development research, hematology/oncology, maternal and fetal medicine and pulmonary disease. The center also offers a dental training program in oral surgery. Other active training programs at the medical center include a hospital administration residency program conducted in conjunction with the U.S. Army/Baylor University Graduate Program in Healthcare

Administration, nurse anesthetists and operating room nurse training programs, and medical and dental technology programs for enlisted service members.

MAMC's research mission is closely tied to the organization's primary goals of patient treatment and professional training. A Clinical Investigations department supports research protocols initiated by medical residents and staff. The department has the capacity for small animal research, canine husbandry and holding, and possesses a small laboratory for analytical examination of research results.

As a regional medical logistics support center, MAMC serves as the installation medical supply activity (IMSA) for Fort Lewis and the northwest region of the United States. With medical supply and equipment acquisition and management capabilities, and an extensive biomedical maintenance support program, the IMSA directly supports medical units assigned to Fort Lewis and three medical facilities located at Fort Lawton in Seattle, the Yakima Firing Center in eastern Washington, and the Umatilla Munitions Depot Activity in northeast Oregon.

MAMC's current physical plant was constructed during World War II and is comprised of 166 separate buildings connected by over a mile and a half of corridors. The old WW II facility is scheduled to be replaced by a new physical plant in March, 1992.

The new medical center will have 1.2 million square feet of floor space and a capacity of 414 peacetime inpatient beds. In the event of armed conflict or national emergency, the new hospital can expand to a capacity of 622 beds.

The new Madigan facility will include significant state-of-the-art technology, including a hospital-wide office automation and management information system, a filmless X-ray system, an open-heart surgical suite, and numerous other state of the art medical capabilities. This new facility will cost the government over $278 million when complete, and will provide the Pacific Northwest and the Army with the most advanced medical facility constructed in recent history. (MAMC, 1989)

As a military medical center, MAMC has several unique characteristics that distinguish it from its civilian counterparts. These differences exist primarily in the organization's command structure. MAMC does not have a board of directors, Chief Executive Officer, or Director of Medical Services, as might a civilian medical center. Rather, the center is run by a Commander (a brigadier general, physician), a Deputy Commander for Clinical Services (Colonel, physician), and a Deputy Commander for Administration (Colonel, administrator). The hospital's parent command, HSC, serves the role of board of directors for the center, providing general guidance and direction

to the local chain of command. Figure 1 represents a graphic display of the medical center's organizational structure.

The hospital Commander (CO) is a surgeon, recently promoted from a high visibility position in Washington, D.C. Assigned to the position for over one year, he has proved adept at managing the protocol and community relations aspects of the position. While he delegates the majority of the hospital's day-to-day operational responsibilities to the Deputy Commander for Clinical Services (DCCS) and Deputy Commander for Administration (DCA), the CO reserves the ultimate right to make operational decisions for himself. The CO's background and contacts at the highest levels of the federal government have proven extremely valuable to the center when it has been necessary to negotiate for a declining supply of fiscal resources.

The DCCS is the focus of medical operations in the medical center. He serves as the primary controller and advisor for operations in the numerous patient treatment and teaching programs within the facility and keeps a close eye on the financial position of the hospital. The DCCS is uniquely qualified for this role. A West Point Military Academy graduate and former Signal Cops officer, the DCCS has served as a line company commander, and did a combat tour in Vietnam. As a medical officer, the DCCS is board qualified in preventive medicine and is a flight surgeon.

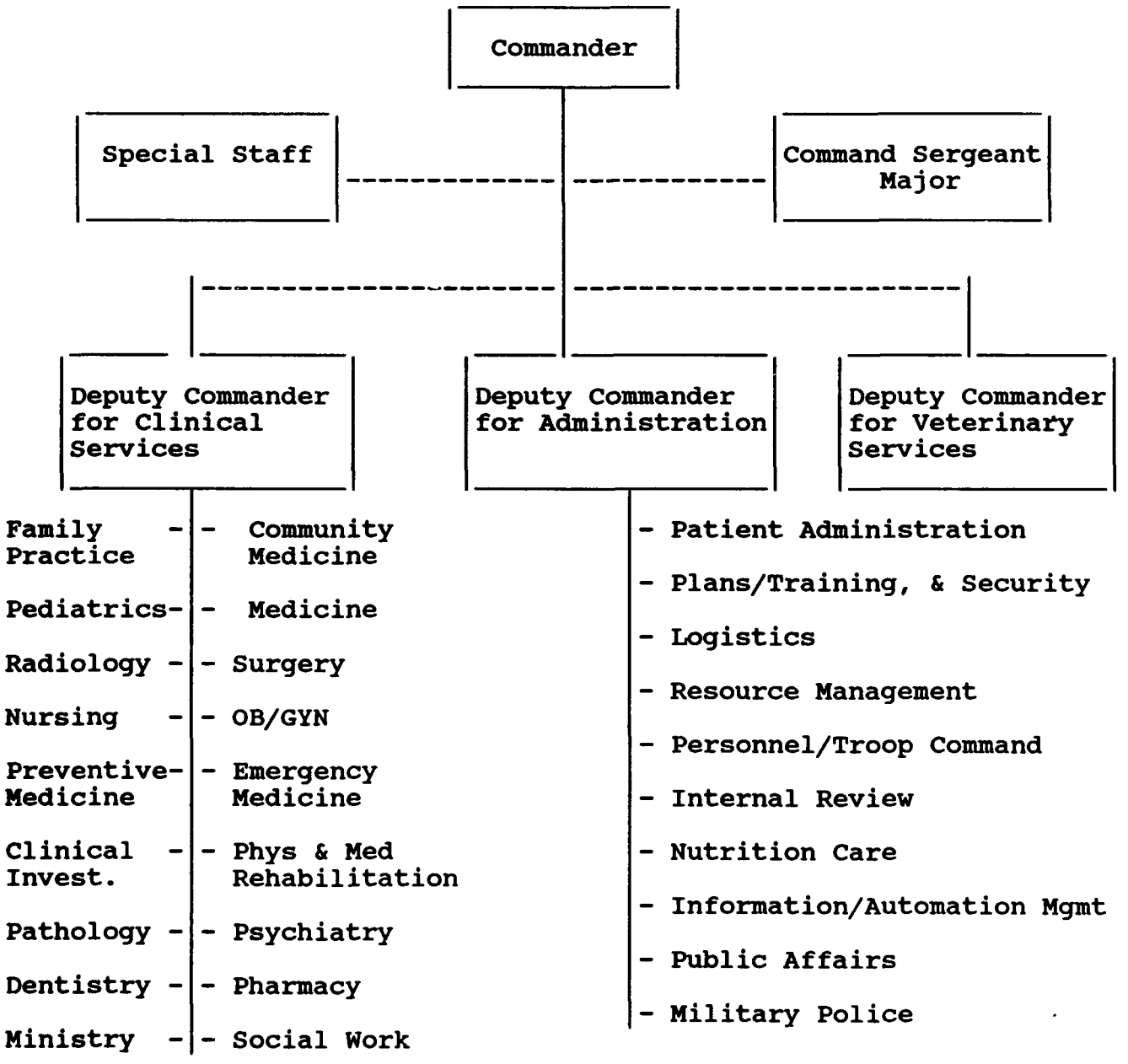


Figure 1. Madigan Army Medical Center organizational structure.

His varied background enables the him to understand the military system and relate its intricacies to the operations of the medical center.

The DCCS maintains a close working relationship with his subordinate medical directors, many of whom outrank him. This places the DCCS in the unique position of having to treat his directors and staff as colleagues and peers, as well as be ready take control and make decisions stick when the chain of command is involved. The DCCS is extremely dedicated to his job, committed to the task of preserving the integrity of the facility's mission. Current concerns confronting the DCCS include the rising cost of referring military health care beneficiaries to the civilian sector for care under the CHAMPUS program, and the diminishing availability of fiscal and human resources.

The DCA is an Army pilot and pharmacist with a Masters degree in hospital administration from the Army/Baylor University graduate program in health care administration. A past DCA at two other Army hospitals, the DCA has had considerable experience in military medical management. He is a "hands off" manager, preferring to let his subordinates exercise their own judgement. His style closely parallels that advocated by contemporary management authors like Blanchard, Oncken, and Burrows (1989). While approach to management is often misinterpreted as low key

and casual by outsiders, he keeps a tight rein on center operations, maintaining a current knowledge of every issue and concern confronting the facility. As a result of his expertise, the DCA has been able to cultivate a close relationship with the DCCS and has the full trust and confidence of the CO.

While conservative in approach and demeanor, the DCA has a sincere desire to exercise progressive management philosophies at Madigan. He is particularly interested in those approaches that might enhance performance, realize economies and efficiencies, and increase patient and employee satisfaction. For example, during a recent series of personnel actions, the DCA was instrumental in obtaining approval for alternate work schedules for administrative employees working in high stress positions. While satisfied with the general effectiveness and efficiency of the medical center's operations, the DCA is concerned with the shrinking military budgets provided by Congress. He sees the need for a mechanism to ensure that those limited funds are spent in the most efficient manner possible.

Another key player in medical center operations is the Chief Nurse, who reports directly to the DCCS. The Chief Nurse is a Colonel with a doctorate in nursing and more than twenty years of Army nursing experience. This individual manages the largest single segment of personnel in the facility and supervises a

highly effective Nursing QA program. The Department of Nursing (DON) manages its staff using the Nursing Workload Management System (NWMS), a resource based personnel allocation system that is highly respected in academic circles.

The Chief of the Patient Administration Division (PAD) is a Lieutenant Colonel Medical Service officer, who reports to the DCA. The Chief of PAD is a major advocate of progressive medical administration practices in the medical center. An authority on numerous issues in military health care, this individual has instructed at the graduate level in the areas of patient administration, QA, and UR. It is his opinion that the key to ensuring the efficiency of Madigan's operations lies in the development of an effective quality management program.

Also reporting directly to the DCA, the Chief of Resource Management is a Lieutenant Colonel Medical Service officer with 20 years of administrative experience. He is an open minded individual who prefers direct involvement in the budgetary process. He is well respected by the chain of command and has a reputation for pulling a rabbit out of the hat when finances are tight or the medical center is confronted with a potential budgetary crisis.

Finally, the QA Manager is a highly motivated GS6 Department of the Army civilian with twenty or more years of government

civilian service. She has a considerable depth of experience in the field of medical records management and is an accredited medical records technician (ART). While she lacks a clinical background, she feels totally confident in her abilities to tackle the administrative aspects of QA.

In October, 1989, the DoD implemented PL99-661, notifying HSC and military hospital commanders that the traditional method of funding military hospitals was no longer acceptable. The public law dictated that a DRG-based program for budgeting and monitoring health care expenditures at military MTFs be put in place in all DoD hospitals. In response to a DoD directive mandating implementation of the DRG program, HSC developed a time-phased approach to bring the DRG-based program on line at its hospitals. The initial phase, in place now, consists of allocating a small portion of each MTF's annual supply budget based upon the total DRG "weight" reported by the facility. The details of how later phases of the program will work have yet to be developed.

Inherent within the DRG-based resource system is the premise that hospitals will be budgeted at specific levels of funding based upon the number and types of medical diagnoses treated at each facility. Generally, this system is based upon a specific weight which is awarded to each of 475 diagnostic groups routinely

seen in the military health care system. As discussed earlier, that weight is based upon the complexity of treatment required to treat the specific diagnosis, additives for the demographics of the population served, the unique characteristics of the facility, and other factors. A dollar value is assigned by HSC to an MWU weight of 1.0, which can then be multiplied by the total MWU weight seen at the facility over a period of time to determine the extent of budget resources to be awarded to the facility. In a like manner, the staff of the MTF can monitor the MWU activity at their hospital to track performance and project the impact of workload on the fiscal status of the facility. A hospital that routinely treats more acute cases could expect to receive more funds than one seeing patients with less complex conditions.

As indicated by DoD guidance, a portion of MAMC's supply budget is awarded based upon the total number of MWUs reported by the facility. Once awarded, the amount of that budget will be fixed, and, in light of current Congressional cutbacks in Defense authorizations, cannot be expected to grow. It is therefore imperative that MAMC develop and utilize an effective, ongoing program which will enable the command to plan, control, organize, and deliver quality health care in a cost effective manner. More

simply stated, such a program would ensure the most judicious use of resources by the hospital. This is the essence of "utilization management."

The existing Utilization Management program at MAMC does not provide a viable construct for effective review of MTF resource consumption. QA documentation lacks reference to DRGs or to the impact of the DRG-based resourcing program on the patient care delivery system at the medical center (MAMC, 1987). Any effort to develop a UR program for the facility will start with a clean slate. The effort will result, in a sense, in a pilot program that must be framed, tried, and may require modification before complete implementation.

For the health care administrator charged with managing care at MAMC, the development of a UR program similar to that used in civilian health care institutions is a must. Such a program should meet specific criteria and address quality management concerns presented by the JCAHO's Agenda for Change (JCAHO, 1989). Additionally, the program should successfully integrate with existing systems such as Risk Management and QA, to provide management with a total quality management information network. Existing programs that provide workload and financial information

should be included as the basis for the UR program to preclude the costs and time delays required for the development of new reporting systems.

Staff support of the UR concept at MAMC is mixed. The major hurdle for such programs suggested in the literature and anchored in reality at MAMC, is the physician staff. In the past, military physicians have not been encumbered by fiscal constraints. The military health care delivery system has been viewed in the past as a bottomless pit of resources. In fact, when that system has run short of funds, the Army and/or Congress has routinely made more funds available. As a result, many health care providers at the facility still hold the perception that as additional funds become necessary, they will somehow be made available. The climate in Congress and the DoD suggest that this is not to be the case and that Defense spending will be severely curtailed in the near future. The management of the institution will have to take a direct role in instilling the UR program in the minds of the physicians and staff if the program is to work.

The DCA, distinctly aware of the problem, looks to his staff for a mechanism to manage the situation. From his comptroller, he demands strict visibility and control over resource expenditures. From others, he asks tightened operational belts and increased vigilance over unnecessary expenditures. From all, he requires a

conscious effort to improve the efficiency and efficacy of operations at the medical center. The DCA has a sincere interest in the principles of TQM and CQI.

On the topic of UR at Madigan, the DCA offers mixed reviews. He understands the application of UR to the health care environment, yet questions its viability in the military health care setting. He notes that UR programs in civilian hospitals are personnel intensive. A recent article reported that in one 450 bed civilian hospital, 9 nurses are employed in UR, alone (Adams, 1987). The DCA suggests that any new program, such as UR, should be able to demonstrate a tangible payback before it could be accepted.

The DCA feels that the physicians at Madigan may not support a UR program unless a significant incentive is provided. In the civilian sector, competition for hospital affiliations, Medicare and Medicaid reimbursements, and the need to make a profit have encouraged physician support for UR. Military physicians are staff doctors, are paid on a salary basis, and have little practical incentive to support any program which places fiscal limits on their ability to treat patients. While an emphasis on UR as a vehicle to facilitate CQI at Madigan may resolve this situation, the DCA's concern remain valid. A tangible incentive must exist before acceptance of any new program can be assured.

While the DCA appreciates the need for a cost control mechanism such as UR, he has concerns over how such a system would be implemented. The major premise of UR is the monitoring of the cost of health care at the patient level. He suggests that attempts to determine the actual cost of health care in the military have proven to be extremely difficult. He reiterates that the Army's financial accounting system does not allow cost accounting to the patient level. This would make it difficult for management to determine whether a physician, or group of physicians, was using the most efficient processes possible in treating the patient.

The DCCS, like the DCA, is concerned that no practical incentive exists for the hospital's physicians, or the command, to support a UR program. He suggests that unless managed properly and presented to the medical staff in a manner that emphasizes the positive aspects of the program, UR will fade away as an issue in the military medical system like so many other trendy, yet poorly developed issues have in the past.

Having recently experienced a JCAHO review of his facility's QA program, the DCCS is wary of initiating any program that might generate the amount of paperwork and bureaucracy necessitated by the organization's QA program. Any new programs at the medical center must be more than another paperwork drill for the physician

staff, and must be cost effective. Resources in the hospital are scarce and administrative support for physicians is extremely limited.

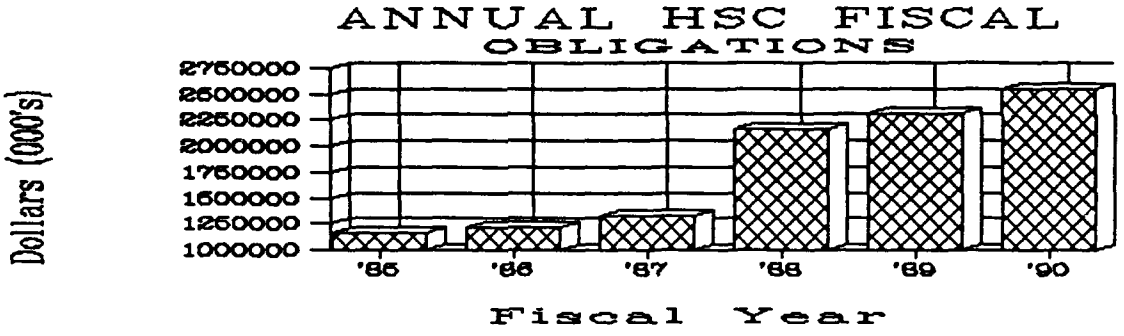
The DCCS suggests that some sort of tangible payback for supporting UR is critical to the success of the program. During one discussion, the DCCS suggested that if the incentive issue could be resolved and demonstrated in a manner that was directly applicable to departmental operations, such a program might be supported by physicians at Madigan. Key to selling the program to the hospital's physicians is providing an incentive that is realized at the physician level, that is tangible, and positively impacts the ability of the health care delivery team to do its job. He noted that a prime objection heard from physicians resistant to the use of UR programs is that they already do UR on an informal basis at the service and department level.

The Chief of Resource Management Division (RMD) has no direct opinion of UR. He does, however, share the command's concern over the rising cost of health care at MAMC and in HSC. He provided a significant amount of data to support his concern. A summary of key elements of this data is presented in Figures 2 through 7.

A cursory review of the data provided in these tables and graphs support the command's concerns. As depicted in Figure 2, total HSC expenditures in support of health care increased

substantially during the reported periods. This rise in cost is mirrored at MAMC, which has recorded a consistent rise in total budgetary expenditures over the past five years (Figure 3). Further analysis of this data shows constant increases in cost over time for the average occupied bed day within the command and at MAMC (Figure 4). This rise in costs has transpired in spite of relatively stable patient admissions (Figure 5), decreasing patient census (Figure 6), and a declining average inpatient length of stay (Figure 7).

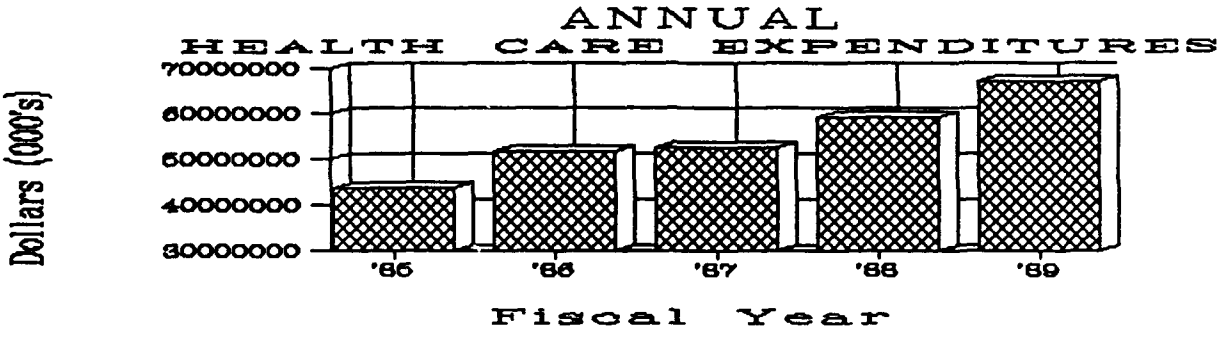
As the command's chief financial analyst and comptroller, the Chief of RMD manages the hospital's MEPRS program. This program provides substantial data related to hospital operations, including the indirect and direct cost of operations down to a department and medical speciality level. While excluding many of the costs of hospital operations, such as the physician pay bonuses, MEPRS does provide a baseline of data that might be usable for comparative purposes, including workload information, staffing data, and operational costs. The RMD chief suggests that with the considerable resources he is required to commit to maintaining the MEPRS program, any cost-oriented initiative not based upon MEPRS could not be effectively supported by his office. On the other hand, MEPRS data is well organized, is easy to obtain, and is easy to read. Problems with the MEPRS data that



Raw Data
(in dollars)

FY	85	86	87	88	89	90
Obligations (millions)	1156.4	1219.7	1321.6	2158.1	2307.9	2544.6

Figure 2. HSC total fiscal obligations for fiscal years 1985 through 1990.



Raw Data
(in dollars)

FY	86	87	88	89	90
Budget (millions)	43.9	51.47	52.3	59.1	66.9

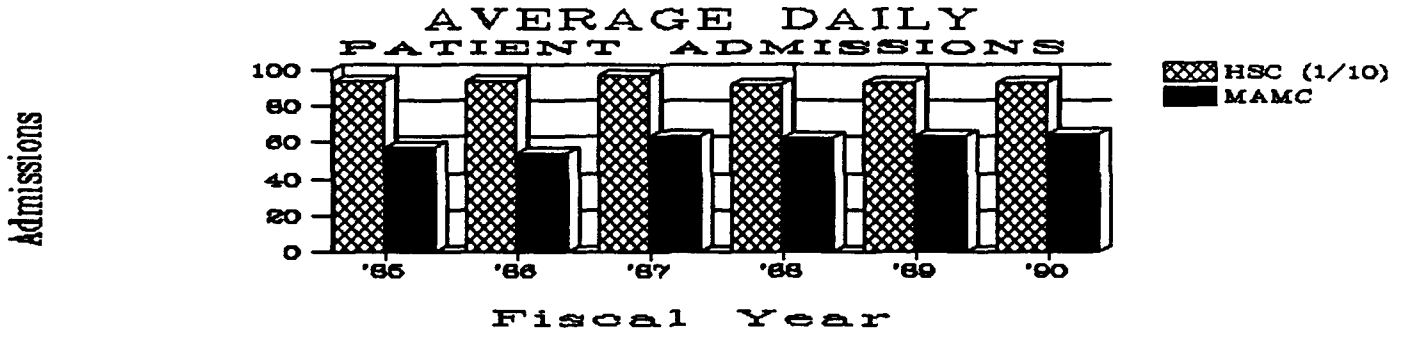
Note: Data does not include costs of military pay, or base support.

Figure 3. Madigan Army Medical Center total annual expenditures for fiscal years 1985 through 1990.

Raw Data
(in dollars)

FY	85	86	87	88	89	90
HSC	134.72	148.08	159.53	167.21	176.05	186.86
MAMC	131.82	137.29	208.53	210.12	224.21	253.14

Figure 4. Cost per occupied bed day for HSC and MAMC over a six year period.



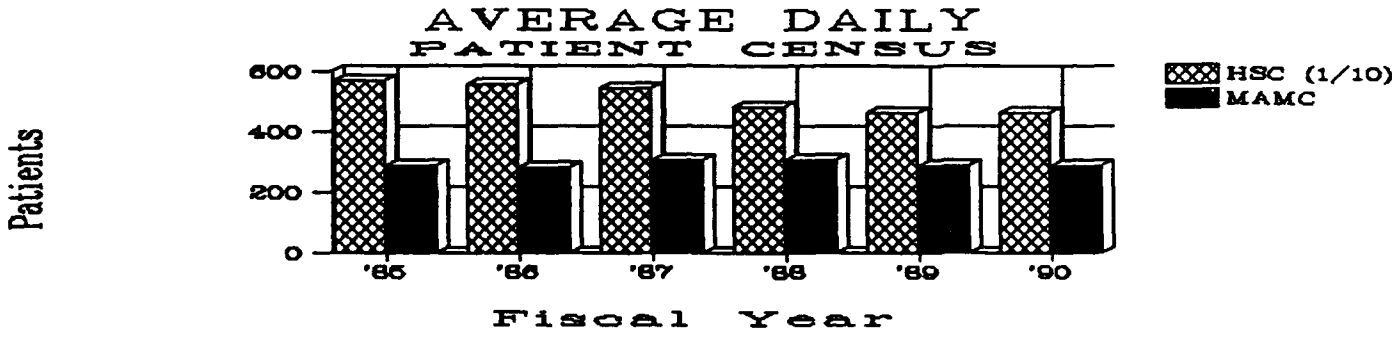
Raw Data
(number of admissions)

FY	85	86	87	88	89	90
HSC	939.3	942.2	970.2	919.8	926.0	928.7
MAMC	56.8	53.9	63.6	62.7	63.1	64.9

Notes: 1. HSC data reported in figure at 1/10 scale.

2. HSC 1988-90 data adjusted for loss of 1 medical center.

Figure 5. Average daily admissions within HSC and at MAMC over a six year period.



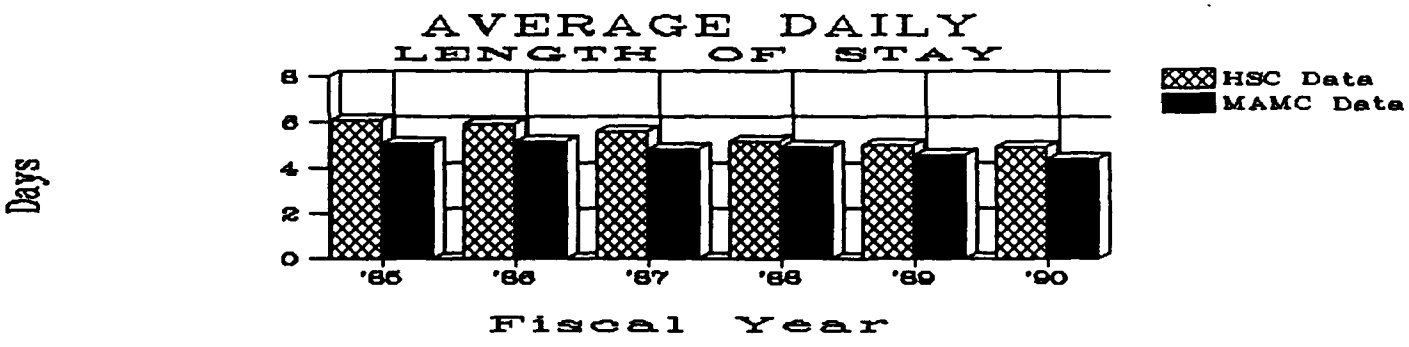
Raw Data
(numbers of patients)

FY	85	86	87	88	89	90
HSC	5702.3	5588.5	5457.1	4782.5	4635.2	4611.2
MAMC	289.4	282.8	305.6	307.4	290.5	286.9

Notes: 1. HSC data in figure is at 1/10 scale.

2. HSC data for 1988-90 adjusted for loss of 1 medical center.

Figure 6. Average daily census within HSC and at MAMC for a six year period.



Raw Data
(in days)

FY	85	86	87	88	89	90
HSC	6.1	5.9	5.6	5.2	5.0	4.9
MAMC	5.1	5.2	4.8	4.9	4.6	4.4

Figure 7. Average daily inpatient length of stay for HSC and MAMC over a six year period.

may pose a burden to a new UR program might include potential inconsistencies in how different activities report workload and resource consumption information to the MEPRS system, inadvertent omissions of key data, the timeliness of the reports (often delayed by as much as 45 days), and the manpower intensity of the program.

Regarding UR and DRGs, the RMD chief suggests that DRGs do not yet play a significant role in military medical treatment facility management. Even though the current DoD resourcing program is based on DRGs, the product generated by the system is the MWU. The MWU departs from the DRG concept to such an extent as to make the relationship virtually unrecognizable. The RMD chief offered that developing an effective, traditionally oriented UR program will be extremely difficult since Army costing mechanisms do not track medical treatment costs to the patient level. Given the limitations of these, it may be necessary to modify the approach to achieve meaningful results.

During interviews with the Chief of the PAD, it became readily apparent that a major concern for his department and the medical center is capture of third party reimbursements for care delivered to patients covered by commercial or government insurance programs. During the past few years, the amount of

these collections has increased dramatically, as depicted in Table 1. During fiscal year (FY) 1990, more than $1 million was received from third party payors, adding significantly to the operating revenues of the military medical center.

In past years, third party collections did not play a significant role in center operations. Increasingly, as military medical budgets have been reduced by the legislature, the initiative is to the individual MTF to maximize the returns from these sources. To that end, the PAD officer recently hired a Precertification Nurse whose primary role will be to ensure that admissions of patients covered by third party payors are consistent with the standards of care used by those payors. By discussing the admitting diagnosis with the insurance carrier in advance, the medical center is more likely to work out difficulties and problems in communication prior to any attempt to recoup patient expenses. The Precertification Nurse will spend considerable time and effort in communication with admitting physicians resolving conflicts regarding the appropriateness of care recommended by the physician and that which is felt necessary and reimbursable by the third party payor.

The medical record is a critical part of the process required to recover expenses from third party payors and to report patient

Table 1.

Third party payor collections at MAMC during the period of 1985 to 1990 (MAMC, 1991).

FY	87	88	89	90
Collections (000's)	68.8	370.0	514.4	1378.1
% Change	100	537.8	139.0	267.9

workload to HSC for budget consideration. Inpatient records, in particular, provide important data for budget analysts in terms of diagnoses treated, length of stay, etc., and serve as the basis for third party collections. In many hospitals, the ability of the PAD officer to close out inpatient medical records is a major problem. Not so, at Madigan, suggests the Chief, PAD. In the past several years, MAMC has had an outstanding record in that regard. As of March 1, 1991, outstanding records for MAMC for FY90 numbered less than 10 records.

Group and individual interviews with surgeons and physicians throughout the hospital revealed a variety of responses to the issue of cost control and UR. Many of the career military physicians indicated that a primary reason that they chose the military as a career was that they were not forced to compare their practices against a profit and loss line. These individuals expressed concern that UR and increased cost consciousness on the part of the command would bring military medicine more closely in line with the civilian sector. This would remove much of the incentive for these individuals to remain in the military system. Other physicians indicated that the absence of any sort of incentive makes it difficult to take idea of a military UR program seriously. This is perception is reinforced by the fact that in the past, when money has been short, additional funds have always

been made available. In short, they conclude, there is little need to scrimp on patient treatment, and there is no incentive to do so. Some suggested that if their departments could receive a portion of any savings for discretionary spending, such as for hiring additional staff or buying equipment, that they might be motivated to seek increased efficiencies through participation in a program like UR.

Other physicians share the DCCS's concern that a new program like UR might become a paperwork burden in much the same manner as QA. QA, considered to be well intended and as having provided many positive benefits to the hospital and the practice of medicine, is seen by most as having evolved into a paperwork nightmare. These persons cite the requirement to extensively document discussions concerning QA issues in frequent minutes, track performance indicators in the absence of adequate staffing to do so, and the necessity of establishing and maintaining elaborate QA program plans. Many physicians at Madigan, when contacted directly about this issue, suggested that the administrative requirements of QA detract from patient care, consuming a significant number of physician and nurse manhours. They go on to suggest that these manhours could be better spent treating patients, rather than dealing with paperwork. It is likely that if any new program implemented at Madigan were to take

on such a complexion, it would not be supported. At best, it would become a meaningless paperwork drill that would be paid lip service and would not accomplish its goals.

The DCA has instructed that a cost control program, such as UR, be conducted for Madigan Army Medical Center. He is acutely aware of the need to consider all of the information presented by the center's staff, whether it is politically, fiscally, or perceptually based. The goal will be to overcome those concerns and develop a program that can be used effectively and with minimal negative impact on resource consumption.

Case Analysis

UR is a viable mechanism for controlling costs within the health care environment and is a key component of a hospital's organizational quality management program. As discussed in the literature review, it has been suggested that concurrent utilization review, focusing on patient lengths of stay, is the single most effective mechanism for achieving cost reductions in the inpatient setting. Prescreening admissions, on a prospective basis, is a valuable tool as well, ensuring that the maximum number of resources are obtained by the hospital from third party payors. Prescreening may also be a viable mechanism for ensuring that non-acute patients are not admitted to the facility inappropriately, thus avoiding unnecessary inpatient costs.

Retrospective case review presents a unique challenge to the military MTF charged with running an effective UR program. The military sector's problems stem from its finance and accounting system's inability to track costs at the patient level. This systemic limitation may be overcome through the modification of certain aspects of more traditional UR programs, and adaptation to the Army's unique finance and accounting system. MEPRS data is available at the departmental level. DRG information is also available at the same level. DRG data can be multiplied by the CHAMPUS DRG weights to arrive at a Relative Work Product (RWP).

The product of this effort can then be totalled at the hospital, department and service level, for further analysis. Correlation of the MEPRS and RWP data, along with computation of basic descriptive statistics, would allow departmental and hospital expenditures to be associated directly with workload. On this basis, a mean expenditure per RWP weight of 1.0 could be computed as a hospital standard for comparison with departmental averages. By extending this mean expenditure for the hospital plus or minus 1.15 standard deviations, an upper and lower control limit for expenditures could be generated. This figure would consider 75% of all cases as acceptable, isolating the remaining 25% as outliers, suitable for further investigation (Phillips, 1978). The establishment of upper and lower expenditure control limits is similar to the approach used in industry for establishing ranges of acceptability for quality control inspections of machined products (Grant, 1952). This approach has been successfully applied to the health care industry in previous studies (Re & Krousel-Wood, 1990).

Departmental RWP totals can then be multiplied against both the upper and lower expenditure control limits, and compared against the actual departmental average for a RWP of 1.0. Excluding any department which fell within plus or minus two standard deviations of the hospital standard for a RWP of 1.0

would allow management to isolate those activities that significantly exceed or fall below the general population of departments and services. These departments can then be designated as the target activities for further, focused review. The case load of those departments could be reviewed for potential one-time events responsible for the unusually high or low costs, and for health care provider practices that might be responsible for the situation. A statistical trial of this procedure has been completed for MAMC and its key clinical services. The results of the analysis appear in Annex B.

The analysis of the cost, dispositions and RWPs for MAMC show interesting results. The correlation of RWP to costs is extremely high, at .94176 (critical value = .38743 [2 tail test, p = .05]). This strong positive correlation suggests that RWP may be a good predictor of expenditures for the medical center. It must be noted, however, that several adjustments to the data were required prior to the correlational analysis, that impacted the results. First, services with errors in recording of DRG or cost data were eliminated from the analysis. This excluded such activities as Dermatology Service, and the intensive care units. In the instance of Dermatology, a RWP weight of 1.0 was recorded against expenditures of almost $20,000. The intensive care units (ICUs) were eliminated from the analysis since they are not always tied

directly to a service or department. The ICUs had DRGs and operational costs recorded, when in fact, they are not directly responsible for generating workload of any type. ICUs respond to the needs of the services by treating patient admitted by those services. In that respect, the DRGs and costs recorded for the ICUs should be tracked back to the admitting service for each patient. That was impossible for this study, leading the author to delete the ICU data entirely.

In the second instant, data was combined for services where DRG and cost data was recorded inconsistently, yet the activities were closely related. In such cases as the Department of Family Practice, OB/GYN, surgery, pediatrics, etc., it was reasonable to assume that inconsistencies in the reported data were due to random error on the part of those recording the workload and costs. To alleviate the problem, all Family Practice charges and RWP were collapsed and analyzed as a single service.

The results of the analysis yielded reasonable Upper Expenditure Control Limits (UECL) and Lower Expenditure Control Limits (LECL). These figures, identified in the annex, can be used to isolate those activities which should be investigated for further review, and for use in establishing a baseline against which the organization's continuous quality improvement efforts can be measured. A Utilization Review Committee (URC) would be

responsible for carrying out this task and making recommendations for further, focused review to the UR Committee.

The incentive for carrying out these functions, and for making the effort to modify potentially inappropriate behavior in favor of those which might be more efficient, must be tangible if the UR program is to be accepted by the institution (Manheim et al., 1990). The concept of providing an incentive to hospitals and departments for cost savings resulting from internal initiatives is not totally new to the military. It was the author's experience at William Beaumont Army Medical Center during the period of 1985-1987, that medical departments which realized increased efficiencies in supply expenditures were awarded a portion of those savings for discretionary spending. In some cases, new equipment or furnishings were purchased for the clinics and offices in the facility using that award. In a few instances, temporary part-time and full-time help was hired for special projects or to resolve a backlog of work. In each of these instances, the physicians responsible for the savings felt that the rewards from their actions were appropriate and significant enough to warrant continued vigilance regarding unwarranted expenditures.

It is only reasonable to assume that incorporation of a new program like UR will result in some additional program costs for

the organization. The objective is to align these costs in a manner such that a positive cost-benefit relationship exists. Departments will necessarily be tasked with taking the time to compile the data for the UR process. The time required to analyze the results of that data will place an additional burden on the individual departments in the hospital. Having observed many civilian and federal medical treatment facilities where active UR programs are in place, it would appear that a centrally run UR program would be most cost effective. Centralized control over the process serves to consolidate effort, provide enhanced, unbiased information to the command, and concentrate experience.

A UR office should be established to manage the UR program as part of the organization's total quality management program. Ties with other related activities such as Risk Management and Quality Assurance, should be encouraged. Data derived by the UR office should ultimately be consolidated with other data relating to the quality of operations at the facility to facilitate the continuous quality improvement process.

The literature suggests that good UR program is made up of a corps of UR professionals who review patient cases for appropriateness of care, the effectiveness of efforts to document that care, to screen and certify the need for patient admissions, suggest or waive second surgical opinions prior to admission, and

teach and answer physician and patient questions regarding UR (Adams, 1987). These roles would be carried out by a variety of personnel under an effective UR program serving MAMC. A key member of that group of professional would be a UR Coordinator, assisted by an administrative assistant. A nurse clinician should fill the role of UR Coordinator, carrying out the majority of the data analysis, report generation, education, and command consultation duties of the program (Adams, 1987). The administrative assistant would assist the UR Coordinator with data gathering, statistical analysis of the data, and miscellaneous office management and word processing duties. A cost-benefit relationship between the cost of these two employees and necessary equipment and supply support, compared to the savings traditionally realized by UR in other institutions is provided as Table 2. The results of the analysis clearly demonstrate the potential benefit of having this office in place and functioning.

Additional personnel involved in the UR program would include the Precertification Nurse currently located in the PAD office, the four Registered Nurses currently working out of the QA office, and a UR Committee. The Precertification Nurse would continue to carry out the functions detailed by the Chief, PAD in existing job

Table 2.

Cost/benefit analysis comparing UR implementation costs to potential savings based upon historical statistics provided in current literature.

Element	Cost	Savings	Net Benefit
Program Costs			
Personnel (Note 1)	$57,091		
Equipment	10,000		
Supplies	4,000		
Subtotal	71,901		
Projected Savings (Note 2)		$7,789,507	
Net Savings/(Cost)			$7,717,607

Note 1. Costs based on one GS9 (step 5) and one GS5 (step 5) plus 18% cost of benefits.

Note 2. Projected savings is based upon a 13% annual savings factor reported in Adams (1987) and FY90 inpatient costs reported in Annex B.

descriptions. The single additional duty that this individual would carry out would involve passing information to the UR Coordinator on a scheduled or as-needed basis.

The four QA nurses currently reviewing patient cases on the wards would continue to carry out those functions, but would acquire the additional duty of identifying the allowable LOS associated with the patient's admitting diagnosis. This would be annotated in the patient record and monitored regularly. Patients approaching the end of the allowable LOS would be identified by the QA nurses and brought to the attention of the attending physician. The attending physician would then be required to recertify the admitting diagnosis, justify a continued stay in the hospital, or take other action as required.

In cases where the QA nurse did not agree with the physician's rationale for a continued stay, the patient file would be elevated to the UR Coordinator for further action and resolution. It must be emphasized here that the allowable LOS should be based upon a valid standard, such as that adopted by the DoD, Medicare or state Medicaid program (Conner, 1988). Physicians must be educated as to the source of this information in order to secure their support of the program and avoid the potential perception that the UR

program is in any way arbitrary. Hospital management must take the lead to ensure that the value of the process is instilled in the minds of the physician staff.

Once a viable UR program has been implemented, it is imperative that it be monitored for effectiveness and content over time, and that regular input be provided to command concerning the programs progress. A UR Committee should be established to meet regularly to review the program to ensure that it remains current and cogent, to resolve problems related to UR, and to make recommendations to the command. This committee would focus solely on the purpose of reviewing UR matters. It was the intent of this project to initiate selected group processes with a variety of health care providers and support personnel throughout the facility, to assist with the design of the MAMC UR program and to serve as the core of an eventual UR Committee for the institution. Unfortunately, the Middle East War currently underway has thrown the hospital staff into considerable turmoil and made such group process impractical. Once the conflict has ended, consideration should be given to initiating a forum of health care providers to assist in evaluating the effectiveness of the hospital's UR program and to recommend changes to the program.

In those cases where the review of a patient case has been referred to the UR Coordinator for action, and resolution between

the Coordinator and the attending physician appears unlikely, it is imperative that final determination of the case be made by a physician. This concept is discussed widely in the literature (Becker, 1989; Cox & Force, 1989) and is key to the credibility of the program. A staff of senior medical officers should be appointed the responsibility of reviewing these cases as a part of the medical center's UR Committee. A qualified, experienced UR Coordinator will not need this service on a frequent basis, but must be able to call upon these individuals in the event that a determination must be made.

The literature suggests four major questions that should be answered prior to establishing a UR program at a health care organization. These questions must be directly related to the goals that the organization has established relative to UR:

1. What data is necessary to attain visibility over activities relevant to UR?

2. What data is available in the organization that might provide the necessary oversight of medical operations?

3. How will the UR data be used by the organization?

4. What are the future requirements for UR as the organization expands and adjusts services over time? (Bittle & Bloomrosen, 1990).

Automation is often a primary vehicle in active UR programs due to the necessity to accumulate and manipulate a large number of variables and input from a large number of organizations. When building a UR program with an automated operational system, six considerations are pertinent:

1. The focus of responsibility within the organization. Who will have primary say over what will happen to the data gathered by the UR process?

2. The needs must be determined. This will determine the complexion of the data to be retrieved by the system, and in what form that data will be acquired.

3. The identity of the external and internal sources of UR data. This should apply to sources of generic data as well as that provided by systems specifically constructed to support existing QA programs. This approach will assist in identifying the number and type of areas that will be accessed by the system, the types of system interfaces used, input forms for the systems, and the programming necessary to interface existing systems with the new UR program.

4. The location, type, and operational and functional capabilities of existing systems. The characteristics of existing automated systems from which UR data will be acquired will enable systems designers to develop a UR system that will complement

those existing systems and, if necessary redefine all or portions of those systems.

5. The format for the data to be input into the UR system.

6. Changes that need to be made in existing manual and automated management and QA information systems to ensure compatibility with automated functions derived by the UR program. (Bittle & Bloomrosen, 1990)

These questions illustrate the need for a well defined and documented UR program that systematically addresses each of these questions in some detail. Figure 8 is a context diagram depicting the interrelationships between an effective UR program at MAMC and the sources of information and points of contact important in the UR process. As can be seen by a cursory examination of the context diagram, the interrelationships between UR and the hospital's internal and external operating environment are necessarily complex.

Conclusion

Recommend that a Utilization Review program be implemented at MAMC to address the cost control concerns of the command. The most effective approach to designing a UR program for the medical center is likely to be one that emulates classic systems analysis and design processes. This sort of approach ensures that all

aspects of the situation are considered objectively, and that system requirements are adequately diagnosed (FitzGerald, FitzGerald, & Stallings, 1981). Following exhaustive discussions with key staff within the medical center, UR professionals in the private and public sector, and readings from current literature, a UR program architecture was constructed. A data flow diagram format was used for the actual plot of the system, and appears as Figure 9. More detailed explosions of the process should not be generated until the center's pilot program has been initiated and the complexities of this unique UR program are ironed out over time by the UR Coordinator and UR Committee.

A copy of a functional UR program plan is included as Annex C of this paper. It is important to note that this program plan is based upon several documents acquired from a variety of private and public health care institutions,and modified to suit the unique circumstance of Madigan Army Medical Center. (U.S. Army Medical Department Activity, Vincenza, 1988; St. Francis Community Hospital, 1989; American Lake Veterans Administration Medical Center, 1989; American Lake Veterans Administration Medical Center, 1988)

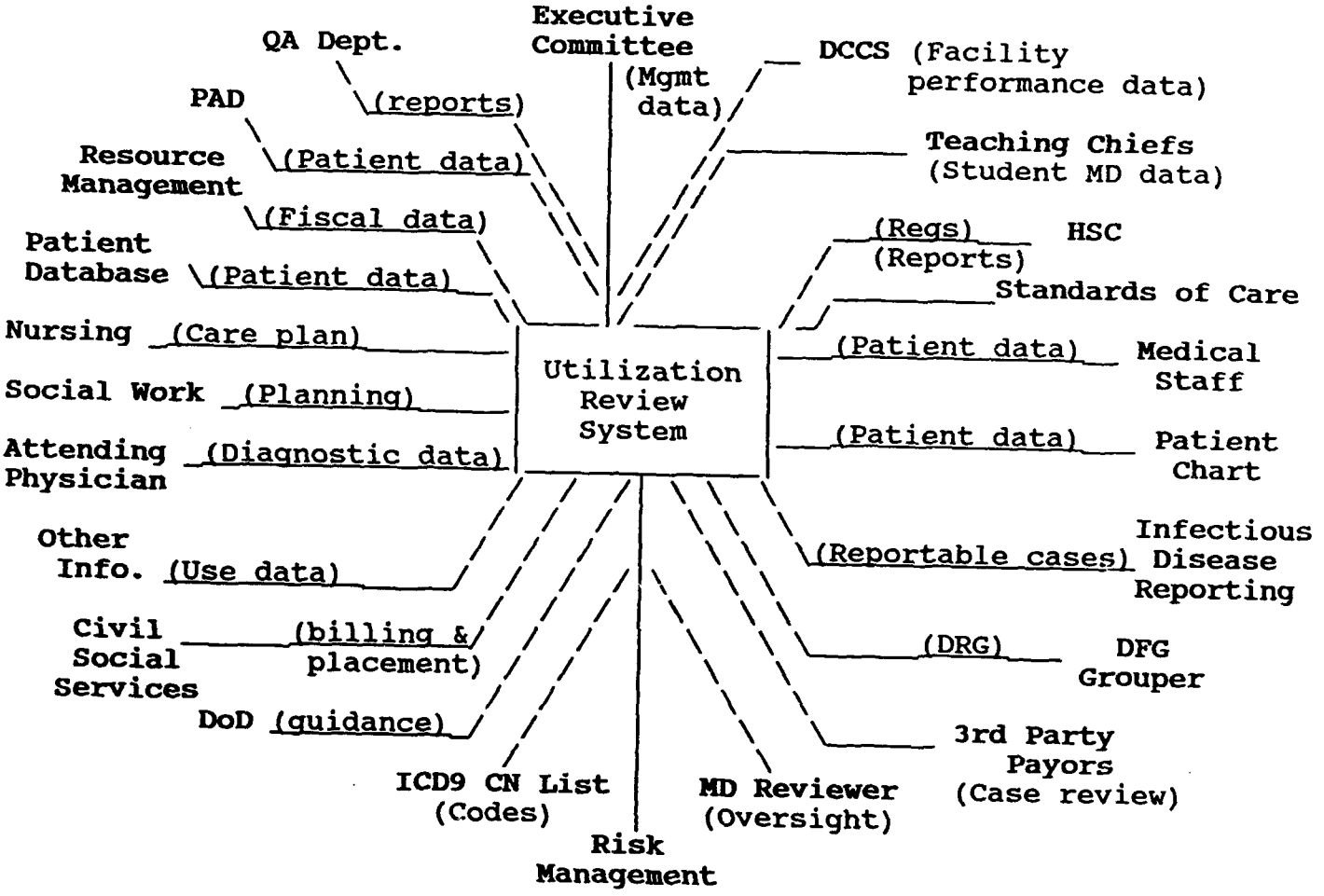


Figure 8. Contextual relationships between UR and other activities in the Madigan Army Medical Center.

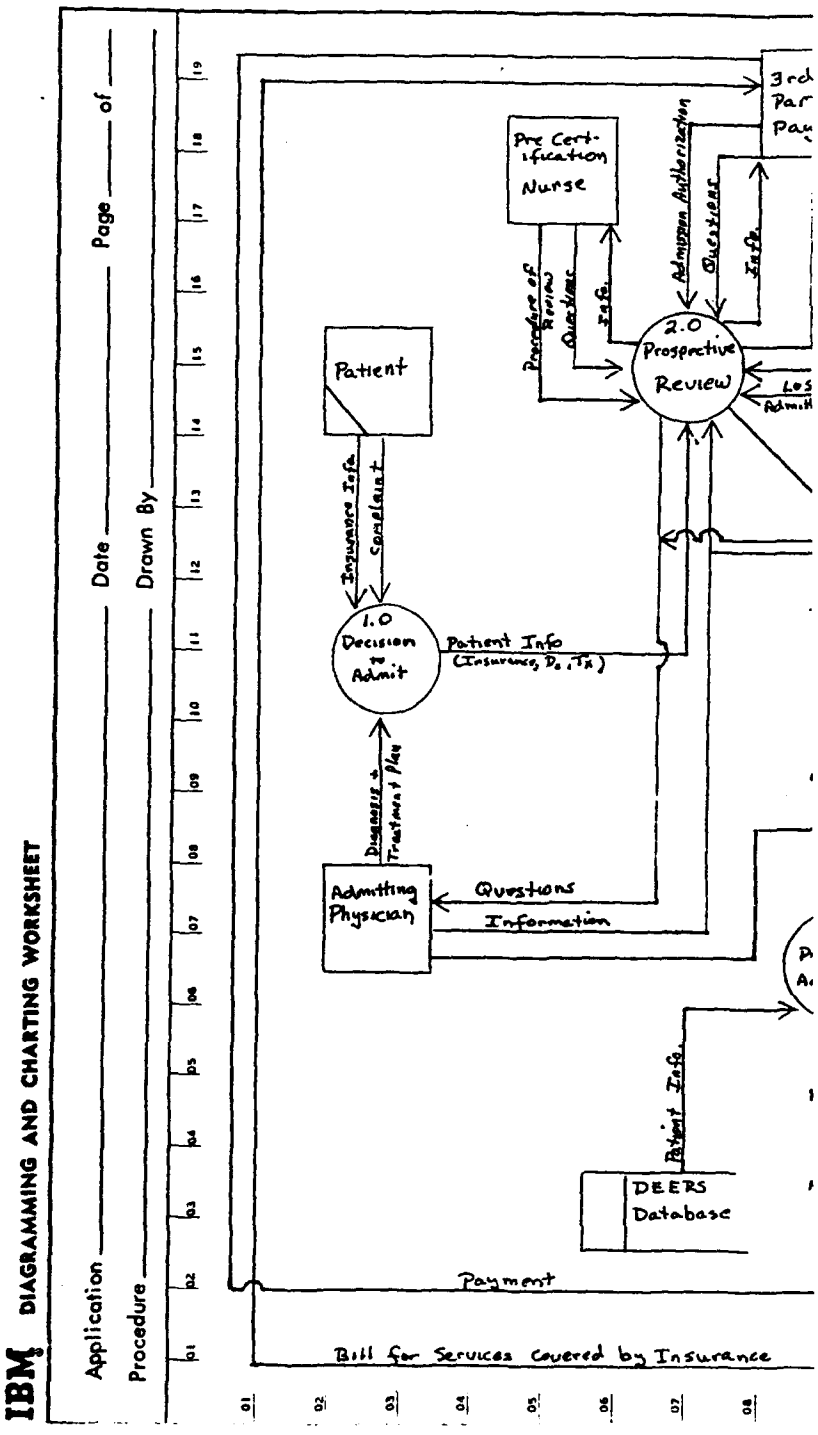


Figure 9. Systems overview of UR process.

The hospital Command and senior physician leadership must be involved in the UR process if it is to be successful. UR reviews should be conducted on a regular basis, such as during the hospital's quarterly review and analysis. Rewards for activities identified as having been successful in achieving efficiencies during the reporting period should be identified in public, and the cost savings awarded to them for discretionary spending clearly identified. This type of visible command interest in the program is essential. The Command must be committed, and must demonstrate its commitment visibly to the hospital's staff through the publication of a command policy on UR, documentation of the hospital's UR program, adequate resourcing of the UR program office, and publication of the program's successes. Specific emphasis should be placed on advertising the type and scope of problems confronted, solved, and additional opportunities for improvement within the system.

Future Considerations

With the increasing emphasis being placed on the cost of health care in the military, it is essential that existing finance and accounting programs used in military MTFs be modified to account for treatment costs at the patient level. This change is not only necessary for good retrospective UR, but is a industry standard for third party payors, such as insurance carriers, Medicare and Medicaid. It is doubtful that these agencies will long be content with the Army's standard price for inpatient care. An itemized accounting will be a necessity at some point in the future.

As demonstrated in the literature, UR is an effective tool for reducing/controlling the rising cost of health care in the civil sector. Such can be the case in the military sector as well. Special care must be taken, however, to ensure that the emphasis does not shift too far toward efficiency, at the sacrifice of quality of care. The total quality concept must be preserved. UR is only one segment of a total quality management program that balances the gains available through programs such as UR, QA, Risk Management, and patient relations (American Hospital Association, 1990). A UR steering committee or working group can be a valuable tool to ensure that this relationship is preserved.

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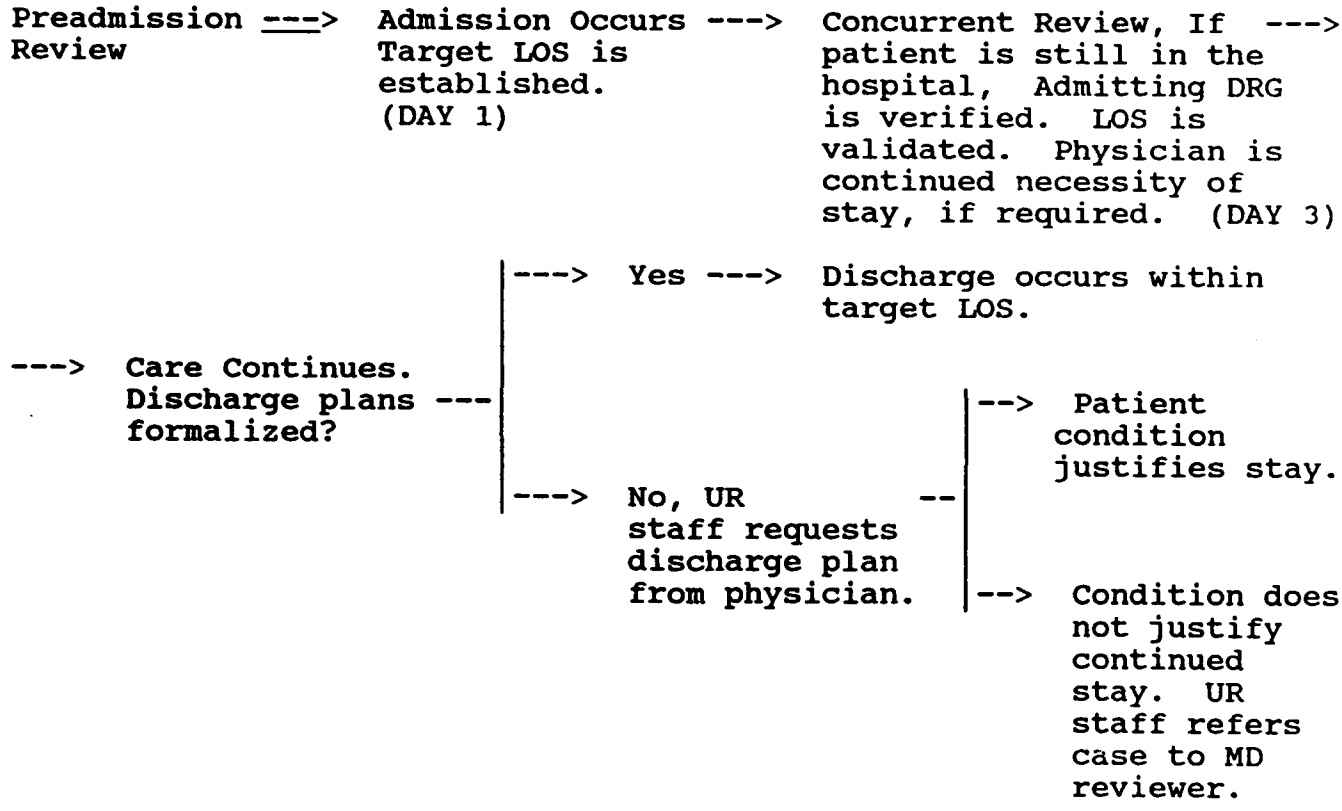
Annex A

Utilization Review

Planning Flowsheet

Utilization Review Planning Flowsheet



Annex B
Correlational Analysis of RWP & MEPRS Cost Data for Departments and Services

Service Data

Activity	RWP	DSPO	Costs	Cost Per RWP	Cost Per DSPO
Internal Med	2742.2673	2244	8242477	3005.72	3673.12
Cardiology	694.2665	669	835306	1203.15	1248.59
Endocrinology	27.7797	25	262710	9456.91	10508.40
Gastroenterology	942.3608	1324	357570	379.44	270.07
Hematology	87.1282	77	356954	4096.88	4635.77
Nephrology	28.8272	25	147462	5115.38	5898.48
Neurology	53.1668	66	226882	4267.36	3437.61
Oncology	443.4719	335	1051358	2370.74	3138.38
Pul/Resp Disease	66.9432	59	289810	4329.19	4912.03
Rheumatology	8.0593	10	41334	5128.73	4133.40
General Surgery	2064.3077	1827	5752372	2786.59	3148.53
Card/Perio/Vas Surg	295.9134	176	905197	3058.99	5143.16
Neurosurgery	619.1462	305	1086273	1754.47	3561.55
Ophthalmology	171.1819	274	341892	1997.24	1247.78
Oral Surgery	292.9738	388	765241	2611.98	1972.27
Otorhinolaryngology	759.2291	1057	1878461	2474.17	1777.16
Plastic Surgery	205.6032	216	477244	2321.19	2209.46
Urology	703.6157	857	1502646	2135.61	1753.38
Gynecology	993.4979	1230	3616915	3640.59	2940.58
Obstetrics	1812.7644	3039	6900557	3806.65	2270.67
Pediatrics	640.1896	888	2896943	4525.13	3262.32
Nursery	710.5815	2116	2069563	2912.49	978.05
Orthopedics	1223.2449	1310	3628656	2966.42	2769.97
Podiatry	250.9448	317	1131998	4510.94	3570.97
Psychiatry	349.2935	402	1768200	5062.22	4398.51
Family Practice	435.8941	651	934941	2144.88	1436.16
Hospital Total	17370.5592	20406	59919290	3449.47	2936.36

Mean RWP = 639.3328 Std Dev. = 678.1247 N = 26
Mean DSPO = 764.8846 Std Dev. = 803.8525 N = 26
Mean Cost = $1,825,729.31 Std Dev. = $2,165,082.45 N = 26
Mean Cost/RWP = $3387.0408 Std Dev. = $1752.4265 N = 26
Mean Cost/DSPO = $3242.1454 Std Dev. = $2042.1460 N = 26

RWP Upper Expenditure Control Limit = Mean Cost/RWP + (1.15 X Std Dev)
= $3387.0408 + 2015.2905
= $5402.3313

RWP Lower Expenditure Control Limit = Mean Cost/RWP - (1.15 X Std Dev)
= $3387.0408 - 2015.2905
= $1371.7503

Multivariat Correlational Analysis

RWP to DSPO = .86838
RWP to Cost = .94176
DSPO to Cost = .85527
N = 26
Critical Value (2-Tail, p = .05) = +/- .38009

Notes 1. Data has been combined for services, or adjusted for errors, where appropriate.

2. Data has been omitted for all intensive care units, coronary care, and proctology due to discrepancies in reporting.

3. RWP = Relative Weighted Product

DSPO = Dispositions

Annex C

Proposed Utilization Review Program Plan

Madigan Army Medical Center

HEADQUARTERS

UNITED STATES ARMY

MADIGAN ARMY MEDICAL CENTER

Tacoma, Washington, 98443

Date

MAMC PAM 40-66-X

CLINICAL SERVICES

UTILIZATION REVIEW PLAN

SUMMARY. This pamphlet establishes responsibilities and policies for ensuring an effective Utilization Review Program at Madigan Army Medical Center, Tacoma, Washington (MAMC).

APPLICABILITY. This pamphlet applies to all staff sections and subordinate units of MAMC.

INTERIM CHANGES. Interim changes to this pamphlet are not official unless authorized by the signature of the Chief, Information Management Division, MAMC.

SUGGESTED IMPROVEMENTS. The proponent of this memorandum is the MAMC Deputy Commander for Clinical Services. Users are invited to send comments and suggested improvements to this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Commander, MAMC, ATTN: HSHM-DCCS, Tacoma, WA 98443.

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1. PURPOSE. The Utilization Review Program (URP) seeks to assure the efficient allocation of medical center resources through the delivery of cost effective, quality patient care.

2. REQUIRED REFERENCES.

a. AR 40-66, Medical Records and Quality Assurance Administration, 1989.

b. AR 40-68, Quality Assurance Administration, 1987. b. Accreditation Manual for Hospitals. JCAHO (Standard UR.1).

3. DEFINITIONS.

a. Quality Assurance (QA). A formally organized sequence of activities which combines assessment of the existing situations, judgments about necessary changes, development of plans to effect such changes, implementation of these plans, and reassessment to determine that the desired changes have taken place (AR 40-68).

b. Utilization Management (UM). The planning, organization, directing, and controlling of medical or dental services in a cost-effective manner while maintaining acceptable standards (AR 40-68).

c. Utilization Review (UR). The study of the appropriateness and necessity of patient care delivered in the most cost-effective manner, at the most cost-effective site.

4. OBJECTIVES. The objects of URP are:

a. To provide and maintain a high quality of patient care, and to promote the most efficient use of available health services and facilities. This objective will be attained through evaluation of the following: Appropriateness of admission and continued stays, services ordered and provided, length of stay statistics and discharge planning practices on both a concurrent and retrospective basis. These findings, along with the results of studies and other pertinent data, will be brought to the attention of the medical staff, to ensure the most efficient and efficacious use of hospital services, personnel and facilities.

b. To ensure that procedures, methods and systems of the URP are cost effective, appropriate to the medical center's patient care, teaching, and research missions, and current with existing medical standards of care.

5. RESPONSIBILITIES.

a. Commander. The medical center commander is responsible for insuring that Madigan Army Medical Center has a Utilization Review Program which meets the requirements of the JCAHO and Army regulations. In accordance with standards established by the JCAHO Agenda for Change, the Commander has direct responsibility for creation and maintenance of an organizational climate and operational programs which facilitate continuous quality improvement within the medical center. This includes establishing

quality objectives and encouraging the development and resourcing of systems such as UR, which monitor, evaluate, and enhance patient care. It is the Commander's responsibility to provide a mission statement which is clearly committed to quality patient care and continuous improvement of patient care systems. Additionally, the Commander will ensure that strategic, program, and resource plans are in place to ensure the continued viability of quality enhancement programs in the facility, including UR. Finally, the Commander must establish a climate for organizational change that continuously monitors the hospital's working environment and encourages positive change within the organizational structure. The daily operation of the UR program is delegated to the Deputy Commander for Clinical Services and the medical staff.

b. Deputy Commander for Clinical Services (DCCS). The DCCS is responsible to the Commander for ensuring that resources are allocated appropriately through the use and management of an effective UR program. The DCCS manages programs to insure compliance with JCAHO UR and continuous quality improvement standards, and existing medical standards of practice. The DCCS has direct responsibility for ensuring the ongoing training and involvement of the medical and ancillary support services staff in the continuous quality improvement program as it is facilitated by

the UR program. Also the overall manager of the medical center's QA program, the DCCS will facilitate systems that integrate UR with existing QA, Risk Management systems to create a viable, working organizational quality improvement information network. and other systems

c. Deputy Commander for Administration (DCA). The DCA is responsible for establishing and maintaining appropriate cost control and reporting mechanisms in support of the medical center's UR program. As chief of staff, the DCA will ensure that human resource systems are in place which actively support the recruiting and retention of health care support professionals in adequate quantities and with adequate skills to support the medical center's patient care needs. The DCCS has general responsibility for providing support resources (facilities, equipment & technology) which are consistent with the efficiency and quality goals of the organization.

d. Chief, Patient Administration Division (C,PAD). The C,PAD will:

1) Supervise the functions of the Precertification Nurse, ensuring that physician requests for admission of inpatients covered by third party payors are properly assessed for compliance with third party payor standards for admission. Further ensure that appropriate lengths of stay (LOS) are

established for inpatients. When standards of care and the expressed intent of the attending physician are in conflict and cannot be resolved, ensure that the issue is elevated to the attention of the UR Coordinator for resolution.

2) Provide the following information to the UR Coordinator, which may be submitted to the UR Committee for review at regularly scheduled meetings:

a) Current long term patient roster for patients who are hospitalized continuously for a period longer than thirty days. This roster will be reviewed by the UR Committee for justification of continued stay in the hospital.

b) Data on post-operative and post-partum stays and the interval between admission and operation, the interval between admission and diagnostic tests, and the effects of pre-admission screenings on LOS.

c) Data on misuse of convalescent leaves, passes, quarters, and patients subsisting elsewhere.

d) Administrative data which causes medical boards to be delinquent.

e) Data concerning CHAMPUS referral patients, CHAMPUS partnership agreements, and other health care initiatives impacting resource utilization at the medical center for and by its medical beneficiaries.

f) The current status of collections from third party payors, indicating total collections, available collections, and allowances for uncollectable billings.

g) The monthly report of medical record deficiencies and delinquencies.

e. The Chief, Resource Management Division will provide the following information as requested:

1) Hospital budget information, to include money spent on supplemental medical care, the CHAMPUS program, and health care initiative programs.

2) Information on personnel requirements and current staffing levels.

3) Applicable workload management indicators (LOS, MCCUs, etc.).

4) Data concerning supplemental care patients admitted to, or referred as an outpatient to local civilian facilities.

5) Other information and studies as requested.

f. Chiefs of departments and services will:

1) Assess the cost effectiveness and quality of patient care on an on-going basis.

2) Develop effective measures to conserve resources.

3) Review appropriateness, necessity, and location of

care, continued stays, and use of supporting services and consultations.

4) Review utilization of services ordered when provided,
as well as those that should have been provided under existing standards of care, but were not.

5) Monitor the timeliness and effectiveness of the Discharge Planning Program in ensuring continuity of care and patient follow-up.

g. The Chief, Social Work Services will:

1) Provide discharge planning input to the UR Committee as requested.

2) Provide criteria for initiating discharge planning.

3) Identify diagnoses, problems, or psychosocial circumstances that usually require discharge planning.

4) Provide a written discharge planning program.

h. Utilization Review Coordinator (URC). The URC will work with the Chief of QA as in integral member of the medical center's quality management team. The URC will normally be an individual with a clinical background, usually a Registered Nurse. This individual will report directly to the Administrative Assistant to the DCCS on all matters pertaining to UR. The URC will be responsible for coordinating all aspects of the URP, including all

phases of continuing review, coordination with other medical center departments and committees, statistical analysis of utilization data and development of normative UR standards, report generation, scheduling of Utilization Review Committee meetings and preparation of meeting minutes, presentation of UR data, and education of medical center staff in matters relevant to UR. The URC, with the UR Committee and the hospital Command, forms the hub of the center's URP. The URC will ensure the communication and integration of UR data within the medical center's quality management information network.

i. Utilization Review Committee (URCOM).

1) Purpose.

a) To assist hospital staff, practitioners and patients in assuring that patient services are reasonable and medically necessary, and to assure that services are provided at the appropriate level (eg. on an inpatient vs. outpatient basis, medically managed vs. surgically treated, home care vs. hospital or ambulatory care).

b) To assure that the care provided to all patients is of a quality that meets professionally recognized standards of health care (effective care provided efficiently).

c) To increase effective utilization of inpatient hospital services through an educational approach involving studies of patterns of care within the hospital.

2) Policy. The URCOM is an important part of the overall URP. The URCOM addresses issues relating to the provision of quality patient care in the most cost-effective manner, including over utilization, under utilization, inefficient scheduling of services, and quality issues. The committee makes recommendations based on its findings to the medical center Command for corrections and improvements in the use of resources.

3) Responsibilities. The URCOM will:

a) Monitor the minutes of department and service Quality Assurance and other programs for applicability to the URP. Special emphasis will be placed upon surgical case review, blood utilization review, drug usage evaluation, antibiotic usage review, and discharge planning.

b) Review the long term patient roster for the appropriateness of continued stay.

c) Review Supplemental Medical Care Program costs, and the costs associated with health care initiatives currently in place at the facility.

d) Review the appropriateness and medical necessity of supportive services used in the facility, identify

aberrant patterns of care including over- or under-utilization of services, and identify corrective actions necessary to modify those patterns of care.

e) Evaluate data on post-operative and post-partum stays and the interval between admission and operation, and admission and diagnostic tests.

f) Assess those cases where patient stay has exceeded the allowable LOS established by the Committee.

g) Assure that discharge planning is initiated on a timely basis prior to, or during hospitalization.

h) Review other data and issues as deemed necessary by the URCOM or the Commander.

2) Organization. The URCOM is a standing committee composed of physician and other professional personnel. The committee will be composed of two or more physicians (M.D. or D.O.). The physician members are representative of the major departments or services of the medical center. Professional personnel from other departments will be included on a consultative capacity (patient administration, nursing, resource management, social work services). Appointment of the Chairman and URCOM members will be made by the DCCS.

4) Meetings. The URCOM shall meet as a group monthly. At least two physician members must be present in order for the

committee to conduct business. The URCOM Chairman may call special meetings when necessary.

5) Records and Reports. Minutes of all URCOM meetings will be kept, and will include the following, as a minimum:

a) Date, opening and closing times, names of members and others present, and signature of the URC Chairman.

b) Reports submitted by the Patient Administration Department pertaining to medical records. Other reports will be considered as required.

c) Actions taken by the URCOM regarding admissions or continued stay of any patient reviewed and the reasons for the actions.

d) A review of medical center statistical data and patient profiles to identify conditions associated with excessive utilization, under utilization, care identified as not medically necessary, high cost, or inefficient scheduling of resources.

e) Any plan and/or corrective action(s) taken or recommended as a result of a retrospective review, to correct deficiencies and improve medical care and medical center procedures or protocol.

f) For any documented problem, the minutes should reflect the conclusions of the URCOM, recommendation, action taken, follow-up procedures, and evaluation of the action plan.

g) Minutes of the URCOM meetings should be disseminated to the Commander, DCCS, DCA, and other agencies deemed appropriate by the URCOM. The URC may act on behalf of the URCOM for distribution of reports without the committee's approval.

5. PROCEDURES.

a. Information and Data Gathering. To ensure maximum efficiency and avoid duplication of effort, information required for the URP will be gathered centrally by the URP Office. The UR Coordinator, as directed by the committee, will assess data which is pertinent to UR. The URC will specifically focus on data trends which may suggest opportunities for improvement within the organization. Where possible, data will be obtained from existing networks such as those present in the hospital's QA, Risk Management, and Social Work Services programs.

b. Methods of Review. Methods of review will include pre-admission screening, continued stay (LOS), and focused retrospective review. These programs will be used to ensure the necessity of hospital admission, the appropriateness of hospital stay, the appropriate utilization and timeliness of support services, and the effectiveness of discharge planning. Review will be ongoing and focused on those diagnoses, problems and procedures, and/or practitioners with identified or suspected

utilization related problems. All reviews shall be made against standards that will be adopted by the command as appropriate and valid. Commercial standards may be utilized and are readily available on the open market but must be approved in writing by the command. A Planning Flowsheet describing the relationship of each of the reviews is included in Annex A.

c. Preadmission Review. Preadmission Review will be accomplished by the Precertification Nurse located in the PAD office. Upon notification that a patient is about to be admitted who is covered by a third party insurance carrier, the Precertification Nurse will contact the insurance carrier for preadmission information. The Precertification Nurse will relate the admitting diagnosis to the insurance carrier, secure their agreement to pay for services, document the allowable length of stay, and pass this information on to the hospital Treasurer and admitting physician.

d. Admission Review. Admission review will be conducted by a QA Nurse on the first working day following admission of a patient to the facility. Working days are Monday through Friday, excluding holidays. At this time, the patient's record will be annotated with the allowable length of stay determined for the admitting diagnosis as determined by the UR Committee. Continued admission review is conducted three days following admission

review for those diagnoses identified for focused review by the UR Committee. Cases identified by the QA Nurse where the appropriateness of admission is questioned, shall be brought to the attention of the UR Coordinator for further consideration.

e. Admission Denial. In those instances where admission is denied by the insurance carrier or is questioned by the Precertification Nurse, that individual will contact the attending physician and attempt to verify the admitting diagnosis and resolve the problem. In the event that a QA Nurse, during admission review, questions the appropriateness of an admission after the fact, that individual will contact the URC for further investigation. The URC will contact the admitting physician to verify the admitting diagnosis and attempt to resolve the problem. If resolution is not possible, the situation and all relevant information will be elevated to a physician member of the URCOM, hereafter identified as the physician reviewer, who will consult with the admitting physician and have final say on all admissions.

f. Continued Stay Review. Through an analysis of DRG and hospital expenditure standards provided by the URC, the URCOM will identify diagnoses that will be subject to perpetual continued stay review by the QA Nurse and URC. These reviews will follow not later than three days following the admission review, and will continue in three day increments thereafter. Cases with

questionable appropriateness of hospitalization and/or quality of care may be referred to the physician reviewer at any time. The physician reviewer or review coordinator will confer with the attending physician and allow that person the opportunity to present his/her views.

g. Continued Stay Denial.

1) Attending Physician Concurs. If, during a continued stay review, the care is felt to be medically unnecessary, the case is to be referred to a physician reviewer. The physician reviewer will confer with the attending physician, who will indicate in the record his/her agreement with the denial by issuing a written discharge order.

2) Attending Physician Does Not Concur. If, on a continued stay review, the care is felt to be medically unnecessary, the case is to be referred to the physician reviewer. The physician reviewer will confer with the attending physician. If the attending physician disagrees, the URC will request immediate review by the physician membership of the UR Committee. If medical records are needed to make the determination, the review coordinator will send a copy of the medical record to the physician members of the URCOM. The physician membership of the committee will make a decision within 48 hours of notification by the URC on the medical necessity and appropriateness of continued

admission. A attending physician will be contacted immediately following issuance of a conclusion by the panel of physicians, and will be directed to take appropriate action.

g. Reconsideration and Appeal. The DCCS will have final decision authority in all cases where the physician reviewer and the attending physician, assisted by the URC, are unable to reach consensus on a case. The URC will normally attempt to mediate such disagreements prior to bringing them to the attention of the DCCS. Decisions made by the DCCS will be final.

i. Discharge Planning. Every patient discharged from the medical center will undergo discharge planning to address his/her needs for continuing care. The discharge planning process will be coordinated by the entire health care team (physician, nurse, social work, and administration), will begin upon admission, and will continue throughout the patient stay.

j. Norms, Criteria, and Standards.

1) Pre-screening. Standards of practice acceptable and applicable to those medical specialties practicing at the medical facility will be used by the Precertification Nurse to ensure the appropriateness of all reviewed admissions. A commercially available set of standards may be used, but must be approved by the Commander prior to use. An attempt should be made to secure a set of standards that are acceptable to both third party payors

and the physician staff. In those instances where an acceptable set of standards disagree with the intent of an admitting physician should be resolved with that physician prior to admission of the patient, as described above.

2) Concurrent Review. Length of Stay (LOS) standards will be reviewed and approved by the UR Committee annually. These standards will be statistically developed and published by the URC and presented to the Committee for review at regularly scheduled URCOM meetings. Data used to develop these standards may be obtained from the U.S. Army Patient Administration Biostatistics Agency, Fort Sam Houston, TX. The standard LOSs will be utilized by the QA Nurses during concurrent case reviews.

3) Retrospective Review.

a) Upper Expenditure Control Limits (UECL) and Lower Expenditure Control Limits (LACL) will be developed and published by the UR Coordinator for a DRG weight of 1.0. These ranges will be computed by dividing the total patient care expenditures for the activity under study (medical center,or department) by the total DRG weight for the activity. The UECL and LECL will be computed by calculating two standard deviations above and below that average. These normative ranges will be used by the URCOM and the URC to evaluate the performance of individual departments and services on a quarterly basis.

b) Retrospective review may be focused on those departments and activities with identified problem areas, high intensity patient workload, or above average expenditures for patient treatment. Department UECLs and LECLs should be computed for departments subject to focused review. Departmental DRG expenditures which exceed or fall below UECL and LECL ranges should be identified for further review. In those instances, a special committee will be appointed to review randomly selected patient cases reported by the department for the identified DRG.

c) The approved standards referred to above should be used as the basis for study of the individual patient cases. The reviewing committee should attempt to verify the appropriateness of care delivered in the cases, and determine what recommendations (if any) can be made to the attending physician and department chair to meet the hospital's UR goals. Committee reports of case review will be documented, sent to the URCOM for review and approval, and forwarded to the appropriate department chief for corrective action. Corrective actions required of the department will be documented in department UR/QA meeting minutes.

d) Disagreement with URCOM recommendations will be documented by the department within 30 days of publication of

the committee's report and forwarded to the URCOM for review. Final arbitration of areas of disagreement between the URCOM and the department/attending physician will be made by the DCCS.

k. Committee Reports and Records. Copies of all minutes, reports, work sheets and other data will be maintained in a way that will insure the confidentiality of the individual practitioner and patient. Reference to practitioners and patients will be by a code to be determined acceptable by the URCOM. Actual practitioner and patient initials, social security numbers, and names will not be used. The minutes will be kept in a locked cabinet. The URC will maintain the security of the cabinet. Medical staff committees, the hospital Command, and members of the Executive Committee will have access to URCOM reports and findings, and may have copies for their review. Medical staff members may review the UR data at any time during normal duty hours. Any other request for data must be submitted in writing to the URC, for approval by the DCCS prior to release. It is the general policy of the medical center not to furnish UR review data to attorneys, insurance companies, patients, or their families or consumer groups.

7. CONFLICT OF INTEREST. A practitioner will not review the records of his or her patients for proper utilization of hospital resources.

8. CONFIDENTIALITY.

a. Formal minutes will not refer to a case in a manner that will allow a patient or the person attending a patient to be identified (e.g., social security number, name, patient register number, physician name).

b. Committee minutes will be maintained in accordance with applicable Army and local regulations.

9. PROGRAM REVIEW AND APPRAISAL. This URP may be amended or rewritten with the approval of the DCCS.

Commander's Signature Block